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Block Scheduling: From Possibility to Reality?

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BLOCK SCHEDULING: FROM POSSIBILITY TO REALITY?

A Dissertation

Presented to

the Faculty of the Department of Educational Leadership and Policy Analysis

East Tennessee State University

In Partial Fulfillment

of the Requirements for the Degree

Doctorate of Education

by

Frederic M. Muse

December 1997

APPROVAL

This is to certify that the Graduate Committee of

Frederic M. Muse

met on the

Sixth day of November, 1997.

The committee read and examined his dissertation, supervised his defense of it in an oral examination, and decided to recommend that his study be submitted to the Graduate Council, in partial fulfillment of the requirements for the degree of Doctor of Education.

Chair, Graduate Committee

Signed on behalf of the Graduate Council

Interim Dean, School of Graduate Studies

ABSTRACT

BLOCK SCHEDULING: FROM POSSIBILITY TO REALITY?

by

Frederic M. Muse

This study examines teacher practices and student learning as perceived by teachers within public high schools that have implemented block scheduling. Comparisons are made between the possibilities advanced by block scheduling advocates and the actual results as interpreted from the data gathered. Comparisons are made between teaching and learning with the traditional schedule and the manner in which it takes place with block scheduling.

Open-ended questionnaires were developed for use with voluntary participants who had worked with traditional scheduling and now taught with some form of block scheduling. Participants recorded observations based solely upon personal perceptions of experiences with students while teaching in both scheduling designs. Special demographic data were provided by each participant, numerically recorded, and analyzed for statistical differences.

This study reports on the generalized trends of the data reported to this researcher. Data revealed that teachers have not adopted new teaching strategies, perceive that they are teaching less, and only the higher achievers benefit from the scheduling innovation. Students do not learn more with a longer class period. Block scheduling produced some unanticipated consequences such as teachers competing for students, reduced club participation, and principals gaining the ability to assign teachers a greater percentage of their preparations away from their major area of study.

The importance of this study lies with the revealed effects of block scheduling not found in any other literature. The research effort gives voice to those persons who actually implemented the scheduling innovation. By using these first person accounts, this study discusses questions surrounding the block scheduling controversy that are not presented in current literature and sheds new light on those that are.

INSTITUTIONAL REVIEW BOARD APPROVAL

This is to certify that the following study has been filed and approved by the Institutional Review Board of East Tennessee State University.

Title of Project: Block Scheduling: From Possibility to Reality?

Approval Number: 96-167e

Principal Investigator: Frederic M. Muse

Department: Educational Leadership and Policy Analysis

Date Submitted: April 24, 1997

Institutional Review Board Chair: David N. Walters, M.D.

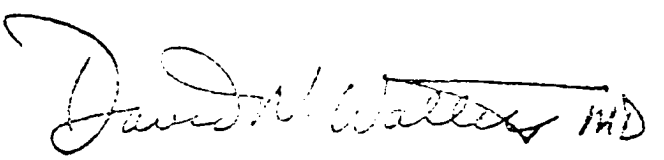

TABLE OF CONTENTS

Chapter

LIST OF TABLES

TABLE

CHAPTER 1

INTRODUCTION

Much has been written in recent years portraying the perceived need for school reform and school restructuring. Goodlad (1979) believes that schools should be reconstructed one by one, and nothing less than this total reconstruction effort that will ultimately involve all schools will be sufficient to institute the vast changes needed in our system of education. Boyer (1983), a strong advocate of the public schools, made the following observation:

> Still, schools reflect both the strengths and the weaknesses of the nation. Caught in a crossfire of competing goals, faced with serious financial problems, and struggling to respond to profound social changes, most secondary schools in the United States are--like the communities that surround them--surviving but not thriving (p. 38).

Most reports since this one by Boyer have displayed a less sympathetic assessment. The 1983 report A Nation at Risk pointedly depicted the American educational system as in need of a drastic overhaul. Barth (1990) refers to this perceived disfavor regarding American education as a crisis of confidence by the American citizenry with the current educational process. Sizer (1992) depicts the traditional high school as:

> a cacophony of jumbled practices orchestrated by a complex computer driven schedule whose instrument is the bell and whose ushers are assistant principals" (p. 3).

Others (Scroggins & Karr-Kidwell, 1995) state that we need a new paradigm for high schools to replace an obsolete one. Titles like "Let's Declare Education a Disaster and Get on with It" (Smith, 1995) further highlight the emphasis on changing how we educate our nation's children.

Reform efforts in education appear to derive from limitless fountains of ideas surfacing from each highly publicized revelation on failed schools or schooling. Block scheduling represents one of these reform ideas. Proponents of block scheduling believe they have the answer to the problem of time associated with teaching and learning. They believe that adjusting the school schedule will initiate a chain of events representing needed reforms in the delivery of educational services to our children.

What Is Block Scheduling?

One of the deduced systematic problems with education lies with its scheduling of classes for students. Therefore, it is theorized, any variation of students' schedules would ultimately result in a systematic change in the entire school day and produce changes throughout the organization. Block scheduling represents such a change in student

scheduling and is currently one of the dominating reform movements within education. All geographic regions of the country (Edwards, 1995) contain some school experimenting with a model of this reform. The primary concentration of schools implementing block scheduling is found in North Carolina and Virginia. A North Carolina Department of Public Instruction official (Scott, 1995) speaking at Western Carolina University during the early spring of 1995 stated that the rapid spread of the practice demonstrated a public proof of its worth. Whether by choice or force, many more schools and school systems are adopting some form of block scheduling in an effort to answer some criticisms regarding how public schools are operated and how students are taught.

Block scheduling employs extended periods of class time for instruction and is most closely associated with the semester system. Under the semester approach, each class period is extended to approximately twice its normal length. Students take four or fewer classes instead of the traditional six or seven classes a day. Other models of block scheduling exist but are not as widely used.

Statement of the Problem

Goodlad (1979) noted long ago a severe problem of our schools lies with the accumulation of nonlearning caused by students not having time to finish and learn a topical

sequence of information before beginning a new set of requirements. Block scheduling proponents claim the reform tackles this issue of time and learning. Many of the professed benefits of block scheduling relate to what will happen in the classroom. Proponents theorize that the systematic change to block scheduling will produce enhanced teaching and learning, for an extended class period will not permit traditional teaching practices to prevail. However, block scheduling represents a relatively new reform, and there exists inadequate data confirming its effectiveness (Edwards, 1995). Consequently, we know very little about the relationships among the theories of the block scheduling advocates, the actual inputs of teacher practices, and outputs of student learning in schools operating with the reform. The specific questions set forth in Chapter 3 will attempt to elicit first person accounts providing information that will provide insight to the actual relationship between of the theories of block scheduling to actual teacher practices and student learning.

Purpose of the Study

The purpose of this study is to investigate these inputs and outputs. This researcher believes the results obtained from this study will provide useful information for administrators contemplating a switch from a traditional

schedule to a form of block scheduling and for teachers who must implement the switch. Results from this study will reveal (1) discrepancies that occur in the transition of theory to practice and (2) information essential for avoiding identified pitfalls that will surely arise during planning and implementation of any variation of the concepts of block scheduling.

Research Method

Cochran-Smith and Lytle (1990) note that Dewey emphasized the importance of teachers' reflecting on their practices, for teaching is a highly complex, interactive event. It is from teachers' observations and questions that often emerge perceptions of discrepancies between what is intended and what actually occurs. This researcher intends to acquire, present, and interpret data to reveal details and trends related to teaching and learning in classrooms using block scheduling by comparing information to similar information and perceptions reported to have occurred with the traditional schedule. Research objectives include discovering any alterations in instructional practices by teachers who taught both with the traditional 50-minute class period and with the block schedule and reporting perceived or documented changes in student learning that occur with students in a block scheduling environment.

Research Questions

Research questions revolve around three general themes centering on the issues raised by the advocates of block scheduling. These three questions are stated in a manner that represents broad concepts under which many ideas may reside. Research Question One: Have teachers who worked with the traditional schedule and now work with some form of block scheduling changed their instructional practices? Research Question Two: Are students taught in a block scheduling environment provided access to more meaningful learning experiences than students who are taught in the traditional system? Research Question Three: Is the school-wide change to block scheduling beneficial for all students? More specific research questions designed to uncover possible answers to these questions and addressed to specific segments of the faculty are found in Chapter 3.

Significance of the Problem

Advocates of block scheduling present theoretical scenarios regarding what should or must occur in classrooms that switch from a 50-minute to a 90-minute or longer duration. However, little independent study of these possible scenarios has been completed regarding the reality of these theoretical classroom management changes and the accompanying changes in student learning. Practically no

information beyond sample questionnaires distributed within schools soon after teachers and students began working with block scheduling exists. Due to this absence of in-depth research, this project cannot validate any previous research findings. The fact that this research effort stands virtually alone renders it of importance and situates it as a possible significant source of information in the debate regarding advantages and disadvantages of block scheduling.

Research Limitations

Research questions for this investigation require answers involving perceptions. Each participant in the research phase of this project will express a personal definition for terms such as "more" or "less," "depth" or "breadth," and "appreciation" or "need." No indication exists that one participant's perception will closely correspond to another participant's perception. These terms have no generalized meaning to which all participants may relate. The researcher will exercise his responsibility to identify to the extent possible meanings and categories that arise from the acquired data.

Other limitations of this study recognized by the researcher are as follows:

1. The study will be limited in time, with data collection taking place during the spring of 1997.

2. The study will be limited to volunteer teachers and their faculty peers in schools using block scheduling. No administrators will participate.
3. Only public high school faculty will be used.
4. An unpredictable return rate of questionnaires may restrict the sample size and skew the results.
5. Acquiring quality responses may be a problem. The questions will be composed of open-ended inquiries that seek responses detailed enough to extract usable data and consume more time than mere checklists.
6. Respondents are not asked to reveal if the experiences they relate involve teaching and learning in advanced classes, regular classes, or below average classes.
8. The study is not longitudinal but seeks longitudinal perceptions based upon an accurate working memory of each respondent.
9. Respondents are not asked to indicate the level of classes being taught.

Definitions

Block scheduling is the practice of dividing the school year into two semesters with each semester consisting of four classes a day meeting five days a week. Class sessions

last for approximately 90-consecutive minutes and each class ends after one semester, also known as the 4 X 4 system.

Alternate block scheduling is the use of four 90-minute classes meeting every other day and continuing for the entire school year.

Flexible modular scheduling is the division of the school day into unequal time periods depending upon the class being taught. Under flexible modular scheduling, a math class may last 20 minutes and a science lab may extend to 80 minutes. Schedules are weekly and begin anew each Monday.

The traditional schedule is identified as the 45-minute or 50-minute class period with six or more class sessions each day.

Mini-courses are intensive courses offered one or two at a time for a full or half day and lasting a short time, often for eight weeks.

Collegiality means the assembly of teachers for either professional sharing of ideas and information or for social chatting during the school day on the school premises.

Overview of the Study

This study was organized for presentation in five chapters, each containing its own aspect of this research study. Chapter 1 includes the introduction to and purpose of

the study, the problem statement and importance of the research, an overview of block scheduling, the research questions, and definitions needed to understand the study.

Chapter 2 is comprised of the literature review and includes the reasons for block scheduling, a review of dissertations, a comprehensive portrait of block scheduling, conclusions of research completed on topics referred to in this literature, and an historical perspective of the movement from its inception to the 1983 publication of A Nation at Risk. Furthermore, the literature review includes information regarding topics resting under the broad umbrella of education concerns and of particular interest to block scheduling.

Chapter 3 includes the data gathering techniques used to assemble the information needed to answer the research questions and the problems of data gathering. The manner in which sites are selected for study is explained and the location of those sites noted. An explanation of the quantitative analyses performed is discussed. Additional topics include why these techniques were required and why other techniques were rejected.

Chapter 4 presents a report and analysis of the data gathered. Each broad research question is tied to specific items on the questionnaire. The last three items on the

questionnaire are reported as distinct categories. Separate reports for guidance counselors, media personnel, and music teachers are presented. Topics that arose from information provided on the questionnaires but not included on the research questions are also discussed.

Chapter 5 provides a concise rendering of the findings that include an analysis of the literature review and a discussion of the information on the returned questionnaires, a summary of the research revelations, concluding statements, and suggestions for further research.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Only a few isolated articles acting as precursors to the recent emphasis on block scheduling appear before 1990. Boyer (1983), long a visionary in the field of education, wrote the following:

> American education is marked by great diversity. It must be able to adjust to a variety of conditions and strive for education of high quality in a variety of ways. More flexibility in the use of time, in school size, and in serving special groups of students must be carefully considered (p. 230).
>
> The urgent need is not for more time but for better use of time. The great problem today appears to be the incessant interruptions of the bell, the constant movement of students from room to room, the feeling that class is over just as learning has begun. ...The rigidity of the 50-minute schedule, for example, often limits good instruction. ...Therefore, we recommend that the class schedule be more flexible to permit larger blocks of time, especially in courses such as laboratory sciences, foreign languages, and creative writing (p. 232).

Canady, an early and very prominent proponent of the current block scheduling movement, published his first article on the subject in 1984, the year after the landmark Department of Education report A Nation at Risk and the year after Boyer published his observations. Additional articles other than Boyer's vision and Canady's initiative during the

1980s supporting efforts at changing the structure of the school day can best be described as sparse.

The dominant collection of articles promoting block scheduling appear in journals with copyright dates of 1990 and later. Literature surrounding block scheduling contains information that falls into several categories, most of which will be scrutinized within this chapter. This literature review also reveals subject matter conflicting with the information advanced by block scheduling advocates, for it represents education topics mentioned in the broad discussion of block scheduling but not necessarily the foci of the ongoing discourse. This researcher believes the broader picture must be included for the reviewer to gain a more comprehensive understanding of the topic itself, including relationships and interrelationships among issues. Block scheduling is not discussed in isolation herein. Considered as a whole, this researchis an attempt to present a lucid, inclusive depiction of facets included within this particular educational reform effort.

Why Block Scheduling?

The American school has endured for nearly a century without undergoing the basic changes in its organization that have pervaded the social, technical, economic, and political arenas of our everyday life. Reformers are

demanding that the nation's high school graduates possess a better education in both breadth and depth than achieved by any previous generation (Carroll, 1990). Educators began tackling this assignment by attempting to conceive a mental portrait regarding the appearance and structure of an ideal urban high school followed by a surmising of how one might achieve this ideal (Kadel, 1994). Many reformers believe that as we approach the 21st century, a restructuring of learning environments within our schools is required. This restructuring is prerequisite to achieving the accelerated curriculum needed by this nation's most precious resource, its youth (Huff, 1995).

One target for the reform of the current education process lies with the scheduling system for students. Block scheduling proponents perceive a change in the length of the classroom periods available for instruction as providing a new paradigm for the instructional day. Studies have shown that ninth graders have trouble preparing for five or six classes a day (Canady & Rettig, 1992). The traditional schedule contains many ways in which time is wasted through procedural and maintenance issues, fire drills, assemblies, discipline problems, and special events (Fallon, 1995).

Teachers working within the traditional schedule are placed in a restrictive teaching environment (Carroll,

1987). A 50 minute period is too short to provide adequate teaching and learning (Scroggins& Karr-Kidwell 1995). The assembly line nature (sit down-listen-stand up-move out-sit down...) found with the traditional schedule contributes to the depersonalizing nature of high schools. Teachers and students simply do not have the time together needed to develop a good rapport. Furthermore, any misbehavior in a 50-minute classroom is unacceptable for it disrupts an already too short class span. Consequently, teacher anger regarding lost instructional time may result in more severe penalties than actually warranted. Not all students learn at the same rate and many students need more time to learn than others (Canady & Rettig, 1995, November). According to Carroll, students cannot receive the individual attention needed during the hurried, regimented shorter class periods (as cited in O'Neil, 1995). The number of times students are in the halls exacerbates student discipline problems. Incidents arise spontaneously as students who do not like each other have more opportunities to gather and display that disaffection.

An inflexible schedule promotes an unfriendly workplace and produces undue stress, for a teacher must plan for too many classes at any one time (Canady & Rettig, 1995, November). Traditional lecturing presents a boring class

that summarily focuses on the lower cognitive abilities and usually lacks any active involvement from the learner (Henson, 1980).

Many reformers and critics relate that teachers have long relied inappropriately upon curriculum requirements and schedules to compel attention to a given area of material. By clinging to this reliance, teachers have neglected developing teaching techniques that plough into the depths of the subject matter they teach. These traditional teaching practices are failing to produce qualities of intellectual stamina desired by parents and the public (Goodwin, 1974). The assumptions related to the benefits of time serving curriculums must be abandoned as relics of the past unfit for the present. The assumption that textbooks are the curriculum must be set aside. Students must have greater opportunities to understand and master difficult subject matter (Huff, 1995).

Reductionist organizations that resort to detail and assembly line departmental teaching do not teach the connectedness of the curriculum. Goodlad (1979) calls reprehensible the expedient adoption by educators of this impoverished concept of education. Failure to teach the relationships among the various academic disciplines does not provide the connections necessary for understanding the

larger picture of life. This lack of connected teaching disregards the knowledge we possess regarding the processes of learning and fails to implement the instructional strategies shown effective through brain-based learning research (Caine & Caine, 1995). There is no excuse for ignoring the current avalanche of scientific knowledge regarding how students learn (Kruse & Kruse, 1995). As a consequence of the revelations regarding the operation of the brain, schools need to rethink the 50 minute class and recognize that it does not contain the time for true brain-based learning and effective teaching strategies to take place (Shortt & Thayer, 1995).

All these reasons indicated by the cited authors render what many consider compelling and overwhelming evidence of a needed change in the manner by which educational services are delivered to the children of America. In addition to A Nation at Risk, references cited frequently by these advocates of change include works by Theodore Sizer, specifically his arguments favoring changing the ways our schools operate, Jeanne Oakes and her arguments for inclusion, and a recent government publication titled Prisoners of Time.

Finding arguments favoring reforming America's schools is not difficult. Neither is finding solutions. Proposed

solutions emanate from a multitude of reformers, agencies, commissions, foundations, commercial interests, and other special interest groups (Bechtol & Sorenson, 1993).

Block scheduling represents one proposed reform. Its advocates declare that adopting this approach to school restructuring permits the potential termination of the assembly line, impersonal, traditional education that critics of education say actually undermines the learning process. Block scheduling will also help address the concerns presented by advocates of brain-based learning by allowing teachers the time to present subject matter in depth and breadth, thus making the appropriate connections with prior learning and other fields of knowledge. This approach is in opposition to the traditional method of restricting teaching to the particular lesson-of-the-day represented by traditional classroom instruction limited to a given school subject. Proponents of block scheduling present a clear picture of the need for changes and of the possibilities of the change they advance.

The History of Block Scheduling

Although the overwhelming totality of articles driving the current trend toward block scheduling by public schools have 1990 or later copyrights, the concept actually has a history. The medieval university operated on lecture

schedules of one-and-one-half hours and two hours (Hastings, 1936). Early American schools conducted classes with the flexibility advocated by the proponents of block scheduling. The charter for Boston's first public high school called for classes in composition, reading, declamation, geography, and arithmetic (Boston, 1974). Nowhere in the charter can one find reference to time periods or school schedules.

The advent of the Carnegie unit created time as a serious consideration in America's high schools. By the late 1800s, colleges and universities had become troubled by the diverse curricula that students took in high school and determined to standardize high school studies for the purposes of college admission. In 1892 the National Education Association created the Committee of Ten to study the problem. Results of the study arrived 17 years later in 1909 with the standardized unit of study for high schools known today as the Carnegie Unit (Coombs & Kessler, 1971). This action followed the 1902 establishment by the National Education Association Committee on College Entrance Requirements that defined units of study in secondary schools and established core courses needed for college entry (Pulliam & Patten, 1995).

An effort at alternative scheduling for schools came shortly after the development of the Carnegie Unit. William

Wirt devised in 1915 what became known as the Gary Platoon Plan. This plan attempted to solve overcrowding problems in the schools by establishing a schedule similar to a quarter system so that all students were not attending school at the same time. Wirt's plan went farther than academics. He tried to use the school 24 hours a day for seven days a week in order to create learning, work, and play environments and make total use of the school facilities (Pulliam & Patten, 1995).

During the 1960s, some schools began to experiment with their schedules. Dr. J. Lloyd Trump is considered the father of block scheduling (Beggs, 1964). Trump's philosophy was founded in the discrediting of the concept of equal time for unequal students (Goldman, 1983). Flexible scheduling for longer science periods began in 1963 as an element of this burgeoning reform effort. The length of instructional time was determined by what was being taught and operated on a 5-day cycle. Students filled each day of the week with a sequence of course offerings with different instructional times. Each Monday the cycle began again (Wiley & Bishop, 1968). Trump and his followers instituted what became known as flexible modular scheduling. This consisted of the school day being divided into 20-minute segments. Based upon perceived need for instructional purposes, each teacher

claimed these segments for courses with more segments being claimed for one course than another. In other words, a teacher may claim two consecutive sessions for a grammar class and four consecutive sessions for a science class requiring a lab.

Objectives of this scheduling practice included correlating learning activities with different subjects and with out-of-class activities such as field studies in the natural or social science subjects. Students signed up for these classes knowing how long each would last and what credits they would fulfill. This complex scheduling procedure became possible only with the development of the computer. The Stanford School Scheduling System and the Generalized Academic Simulation Program of the Massachusetts Institute of Technology provided the electronic capability to keep administrators current with ever-changing course offerings and times and student schedules (Goldman, 1983).

Another format considered the same possibilities of an administrative organization sufficiently flexible to allow a variety of learning activities. With the same ends, a different means was established. A rotating flexible schedule (Monday/Tuesday for example) with longer class periods each day but classes meeting every other day provided an example of such flexibility (Anderson & Gruhn,

1962). Alternate blocks in combination with a shorter period one day and a longer one the next day provided yet another variation of the rotating block. This latter variation came with suggestions for being creative with teaching methodologies and for combining classes to exercise team teaching (Bush & Allen, 1964).

All the arguments favoring block scheduling recited today appeared during the decade of the 1960s. The following arguments of the advocates of scheduling reform portray this truth. Flexible scheduling allows various rates, depths, and breadths of instruction. Team teaching, technology, and a new curriculum can easily be used. Individualized learning will dominate, for each student's schedule is his/her own subject selections based upon his/her perceived needs and skills. Teachers can pace instruction and have the time to adapt to individual needs and encourage independent study. Using their flexibility, teachers will remove the unnecessary repetition of frequent class changes and busywork activities from the school day. Multiple learning activities will place the responsibility for increased learning on the student where the responsibility belongs (Manlove & Beggs, 1965). Simply put, it was hoped that the students would explore their own interests, aptitudes, and curiosities (Thomson, 1971).

A primary advocate of this scheduling stated that the full force of the flexible schedule will lose its impact if new teaching methods do not accompany the changed schedule (Manlove & Beggs, 1965). Knowing facts alone will not produce a satisfying life. Only the thrill of personal discovery will remove the dullness from the senseless repetition that is part of a meaningless rigor of an outdated instructional process. The accompanying problems of block scheduling cited by this advocate included finding that some subjects required more time and some less than allotted, scheduling was difficult, and not all of the public or the teachers understood the objectives of the new scheduling for students.

Other advocates of innovative school scheduling stated that block schedules provided more flexibility in executing classroom activities, ensured better teacher guidance for students, and reduced lesson interruptions (Til, Vars, & Lounsbury, 1967). Vars (1966), however, had earlier noted in his writings the negative perspective that longer lessons required longer preparation times for teachers. This becomes notable since the advocates of the 1960s block scheduling acknowledged some of the shortcomings.

The block scheduling movement had become so pronounced during the 1960s that the term was included in the

educational encyclopedias, complete with examples of various block schedule designs (Deighton, 1971). Another encyclopedic entry attributed the failure of these scheduling reforms as due to the following reasons: students not being mature enough to function under the less rigid school structure; teachers not being able to handle new teaching techniques and develop lessons for large group, small group, and independent study designs, as well as handle the added workload of individualized attention; the outcomes did not justify the expense; and the programs suffered from overselling and overstated claims and thus became scapegoats for student failure (Cooper, 1985). Thomson (1971) found that students who performed poorly under the traditional schedule perform even more poorly under modular scheduling. Studies of achievement during this period indicated that students attending schools using flexible block scheduling scored the same or lower on achievement tests than students attending traditional schools (Goldman, 1983). Goldman also found that studies displaying improvement were school/grade specific, as a particular 10th grade in a particular school doing well. This finding corresponds to conclusions by Cooper that a lack of overall measurable gains in student achievement made difficult justification of the scheduling reform. Finally,

Goldman concluded that schools using block scheduling displayed little change in instructional behavior. Trump (1977) had already described the failure of the model schools projects, designs that included block scheduling as one ingredient, as being due to the criticisms of parents claiming that students were not learning much.

First mention of these earlier failures by Canady and Rettig came in response to an inquiry included in an article published in 1995. The published reply was that earlier efforts were an administrative nightmare, students had too much free time and got lost in the shuffle, and teachers did not receive the proper training to implement instructional strategies (O'Neil, 1995).

Block scheduling has been a mainstay of one educational setting for decades. No negative references could be found for the use of the scheduling concept in institutional or residential treatment settings. The block scheduling concept allows extended time for students with handicaps to learn a skill or for integrating community support services in treatment or habilitation. Longer blocks of time for both academic and vocational learning are prevalent in these settings (Smith 1990).

Another setting successfully using block scheduling can be found with vocational schools (Carroll, 1987). Generally

speaking, elementary schools report a greater satisfaction with forms of block scheduling than do high schools.

Higher education already uses the semester system and either 3-day or 5-day week classes or other variations of this theme. Higher education has experimented with macro scheduling as advanced by Carroll. Cornell and Tusculum are reported to be trying the concept now. Hiram College dropped the approach in 1958, for the longer classes did not compensate for the restricted time. Students needed longer spans of time for practicing foreign languages, math, and science rather than the longer single sitting for instruction. Fallon (1995) reported an important plus of the Hiram experiment to be the increased personal contact between faculty and students. However, after graduates from this experiment attempted post-graduate endeavors, they reported that they did not feel adequately prepared for the rigors of graduate school (Gose, 1995).

Types of Block Scheduling

Block scheduling takes many forms. One primary form is that promoted by Joseph Carroll with his Copernican Plan. Macro scheduling promoted by Carroll is characterized by brief, intense seminars that might be termed micro-courses or mini-courses. Students study only one, or at most two, courses at any one time and study them all day or half a day

for a predetermined amount of time, such as six weeks. The underlying assumption for this form of time management is that by completely reorienting the schedule, conditions promoting improved instructional practices will develop, and more effective instructional methodologies can be implemented with accompanying assurances of greater student learning (Carroll, 1990). Under this system teachers have increased opportunity to concentrate on individual students, a concentration Carroll considers the key to better instruction and improved student performance.

Advantages for this system of time management include reduced class size, increased course offerings for students during the year, a reduced student load for teachers at any one time, and an instructional environment that promotes mastery learning. No increased funding is necessary, for these reforms may be implemented within the existing structural framework of a school (Carroll 1994, October).

Macro scheduling, the scheduling of one course for unusually long periods of daily time, allows students to focus on material found within one or two courses at a time, permits depth and relevance in the learning experience due to the concentrated single subject being taught, and teaches students to pay attention because the extended time of instruction during each single class session requires

this behavior (Carroll, 1987). A student may take several macro courses during the course of a school year.

Interruptions due to frequent class changes inherent with the traditional schedule do not interfere with the student's attention span. These benefits make macro scheduling a more efficient way to learn and allows teachers a maximum of flexibility for selecting instructional methods and individualizing instruction and expectations (Willis, 1993). Students not only complete more courses but do so in less time (Carroll, 1994, March).

Other forms of block scheduling (Canady & Rettig, 1995) concentrate on the more traditional time frames of semester or year-long courses. Forms of block scheduling used with year long courses come with two configurations. The first consists of alternating blocks of a short period one day and a long period the next with subject matter pairings. An example of this schedule may find math and language arts subjects conducted in double or triple length class one day and a shorter class the next with an alternating pairing with science and social studies classes. This design, for example, has a social studies class with a long period and an English class with a short period one day with the time periods reversed for the classes the next day. This design pairing with alternate long and short classes is traditional

in the sense that every class meets every day but untraditional in that class period lengths alternate days.

Another configuration of the alternating block schedule (Canady & Rettig, 1995) involves using four periods a day with each period lasting 90 or more minutes. Under this scheduling technique, students take one set of classes one day and another set the next. The traditional year-long approach prevails with students taking six to eight classes during one year. Since class periods are longer, only four classes can meet on any given day. Therefore, all classes meet every other day during the entire school year. Proponents often refer to this scheduling design as the A/B schedule.

The most common form of block scheduling revolves around the semester system. The trimester system operates either as its name implies during a traditional academic year or as a quarter system, with a summer session being quarter four, allowing students an additional opportunity for repeating a course quickly or taking more courses. This scheduling design offers either two or three courses a trimester with students completing 6 to 12 courses during an academic year. One school touts a tri-semester rendition of block scheduling revolving around athletic seasons, thereby eliminating questions of athletic eligibility (Stumpf,

1995). Another involves a trimester with a summer session being the third semester (Canady & Rettig, 1992).

By far, the most popular model adopted by schools in the Southeast is the two semester or 4 X 4 (4 by 4) system. Using this scheduling practice, students take classes whose daily instructional length is twice that of the normal schedule, take four classes a day, and complete each class after one semester. During two semesters, one school year, students take as many as eight subjects, with summer school subjects adding to this total, but need to concentrate on only four of those eight subjects during any one semester.

Advantages of Block Scheduling

Although he describes and promotes many variations of block scheduling, Canady is the primary proponent of the block scheduling concept known as 4 X 4, the practice being adopted with regularity in the schools of North Carolina and Virginia. The advantages Canady envisions for his block scheduling designs are identical to those arguments advanced by Carroll in the Copernican Plan. Longer classes provide an environment more conducive to student learning for the additional continuous classroom minutes at a sitting produce less wasted instructional time created by more class changes, fewer discipline problems, and increased privacy for teachers developing arrangements with special students

in need of different objectives (Canady & Fogliani, 1989). Students can focus on fewer subjects, must endure the failure of a particular subject for a shorter duration of time before repeating it, and can repeat failed subjects during a regular school year (Canady & Rettig, 1992). Longer classes offer opportunities for more cooperative learning exercises and in-depth learning as well as promoting higher order thinking skills (Scroggins & Karr-Kidwell, 1995). Longer time in the classroom creates a safer school environment for the student due to the reduced number of discipline problems prevalent in environments that include more numerous class changes. Active involvement through hands-on learning improves the child's interpersonal competencies. Longer planning times for teachers also promote collegiality among members of the profession (Buckman, King, & Ryan, 1995). Smaller classes provide a family like structure and, combined with the thematic approach to teaching, develop bonds of trust among students and teachers (Guthrie, 1990). With fewer class changes and reduced hallway traffic, buildings run more smoothly and a better community spirit exists between and among teachers and students (Boarman & Kirkpatrick, 1995). Block scheduling provides quality time for teacher and student interactions because the class time is not fragmented by numerous class

changes, interruptions, and needed disciplinary referrals (Canady & Rettig, 1995, November).

Proponents of block scheduling concepts advance several objectives that they are certain the new conditions created in the classroom will fulfill. The goals of block scheduling are to reduce class changes, reduce the number of students seen each day by teachers, reduce teacher preparations and paperwork, provide blocks of time that encourage active teaching strategies, and allow students variable amounts of time for learning.

Advocates of block scheduling advance a rather lengthy list of suggested teaching methodologies that teachers may incorporate within the structure teaching within of block scheduling. These instructional strategies include the following: (1) cooperative learning, (2) class and team building, (3) paideia seminars, (4) using concept development or teaching by topics by categorizing information, (5) using concept attainment of positive or negative ways of employing information by using examples, (6) using scientific and interrogative inquiry, (7) using problem solving approaches, (8) employing technology, (9) establishing learning centers, and (10) conducting lectures (Canady & Rettig, 1995). Advocates believe the longer class will encourage use of one or all of these techniques, thus

expanding the assortment of teaching strategies regularly employed by teachers.

Implementation of a block schedule will not by itself make the changes. This time management tool merely creates opportunities. According to O'Neil (1995), successful and desired results from today's experiments with alternative schedules depend upon the teacher's willingness and ability to use different teaching strategies. The schedule can facilitate reform efforts, but the activities inside the classroom decide the effectiveness of any such effort.

Preliminary Findings

Positive results regarding the use of block scheduling have been cited or reported anecdotally. In some locations students are believed to have benefitted from the ability to take more courses during one year, thereby making themselves eligible for advanced studies. Students have been able to take two years of math or two years of a foreign language in one year (O'Neil, 1995). Other students are reported to have benefitted from the ability to maintain a dual enrollment in the secondary school and a post-secondary institution (Edwards, 1995).

Evidence exists that block scheduling may increase student achievement, foster critical thinking, and encourage collaborative learning (Salvaterra & Adams, 1995, November).

Observers of classes using block scheduling report more individualization for special needs students and more personal contact between teachers and students and among the students themselves. Teachers have reported appreciating the time to use student group efforts and projects as well as the time to cover material in greater depth. The greater number of teacher-student interactions may foster a greater generalized liking and empathy within the classroom. More teaching methods are being implemented. Teachers have more time for teacher or staff development and professional activities, such as completing college courses or reading from professional literature. This additional time is created by longer planning times at school and less homework for teachers (Fallon, 1995).

Students participating in block scheduling have related favorable comments and displayed more favorable attitudes about school. Students are more relaxed under the 4 X 4 plan, consult with teachers more frequently, and take more electives (Needham, 1993). Students are not bored and discipline problems have declined (Willis, 1993). Students believe that they are achieving more (Reid, 1995).

Reports have also indicated teacher satisfaction with block scheduling, though many of the positive results are anecdotal. One science teacher loves the extra time to

answer questions at the end of a presentation (Gerking, 1995). Another science teacher describes the schedule as perfect for a chemistry lab (Day, 1995). One music teacher likes the extra time to have students listen to professional renditions of the music they are playing and to practice those pieces during class (White & Hardebeck, 1996). One task force that studied a large number of teachers reports high satisfaction with block scheduling (Redesigning, 1995). Teachers appreciate the longer planning periods and often duty free lunch periods allowed under the system (Stumpf, 1995). Many teachers divide their 90 minutes into segments to prevent lecturing for the entire period, thus increasing their repertoire of teaching strategies (Wilson, 1995).

Grades and test scores reported from schools using block scheduling have portrayed an inconclusive picture. GPA's generally tend to rise (Salvaterra & Adams, 1995). The number of "A's" issued at one school increased initially but had declined to their pre-block schedule levels after three years. Teachers report that they cover less material (Needham, 1995).

An unpublished report by the North Carolina Department of Public Instruction (The Block) highlights this fact by illustrating the number of hours per course per year fell from 165 with the traditional schedule to 135 with the 4 X 4

schedule. This translates to 36 fewer class periods a year with the traditional schedule of 50-minute classes or 20 fewer class periods a year for a 90 minute class. Over a period of four years, this translates into a reduction of 144 fewer 50-minute class sessions for a student taking four years of any subject, such as English or math or even a foreign language. Covering specific topics in depth and having this fewer number of class sessions dictates a reduction of content covered in class. In addition to the reduced number of class meetings, having classes that meet only half a year reduces the number of possible homework assignments by one-half for each subject.

This same North Carolina report, analyzing about 25 schools, shows no differences in test scores between block and non-block schools and states that "there is no direct evidence that, on the whole, block scheduling is harmful" (p. 17). The report recognizes the difficulties with the length of the classroom period for lecture purposes and suggests that teachers organize their lessons into 10-minute increments to "vary instruction and cover curriculum in a meaningful and dynamic way" (p. 34).

A more recent North Carolina Report (Blocked, 1996) tried to distinguish end-of-course test (EOC) scores between block and nonblock schools. No differences in test scores

could be found. One must consider that these tests are not normed. Instead, they are derived from the state adopted curriculum objectives. No level of difficulty for the questions is provided. No one outside of test development knows if any of the questions are any more complex from simple knowledge based questions All tests but one have changed over the past five years. In some cases students taking an EOC in the spring took a different test than students who took the test in the fall. This makes year-to-year and within year score comparisons impossible. Finally, there is no indication whether the scores represent actual benefits of block scheduling, traditional classes, or curriculum alignment, also known as teaching to the test. With the "report cards" issued to each school system each year, this last consideration is a prime one.

Along with the North Carolina report that found no difference in student achievement, other settings have produced similarly inconclusive results. Students working with block schedules improved their results for state administered tests but showed no corresponding improvement for nationally normed tests (Hansen, 1991). Scores for the Advanced Placement Tests declined, a result that produced a parental outcry and encouraged most schools to assist the elite group of college bound students. The result was the

adoption of a block scheduling plan using two successive semesters to complete one AP course (Salvaterra & Adams, 1995, November).

In an unpublished report distributed to members in attendance of the North Carolina Association for Supervision and Curriculum Development workshop January 16-17, 1997, the College Board indicated that students in block scheduling scored lower on the SAT 77% of the time (AP, 1996). This same report also provided other interesting details. First, AP teachers do not favor block scheduling. Second, no January testing will be done for there are too few students in block schedules to warrant the expense of a second testing session.

An in-house report at Asheville-Buncombe Technical Community College displayed similar results (Carpenter, 1997). A pool of high school sophomores with aspirations for attending this post-high school institution took the Computerized Placement Test, the same test used for admission purposes by the school. These same students were tested again the following year as juniors. Students from schools using block scheduling showed student performance rising 59% of the time when retested after a year of instruction, which means student scores declined 41% of the time. Students from the school under the traditional

schedule showed score gains 87% of the time, with declines 13% of the time.

Canada has a longer history of experimentation with semester scheduling than the current reform effort in the United States. Research completed in that nation does not indicate block scheduling increases student academic achievement. Raphael (1986, Spring) compared the results of students under the traditional system to those under the semester system on the Second International Science Study tests and the results from an attitudinal survey administered. He found that the students on the traditional system scored significantly higher in biology and chemistry, but not in physics. However, students related better attitudes about science in the semester classes.

Raphael (1986, Winter) used similar comparisons for a second study and published his findings on math achievement based upon the results of the Second International Mathematics Study. His findings revealed that students in the traditional setting scored higher in attitude toward math, but not significantly. The year-long students scored higher in every subset of the math test except trigonometry, where all scores were above the level of chance, and particularly higher in areas of abstract content (analytical geometry and probability).

Carroll (1994, October) relates findings of mixed results similar to those reported in Canada for his macro-scheduling concept. These positive survey findings include reports that students were better known by their teachers, were responded to with more care, did more writing and studying in greater depth the topics covered in class, received more credits, and were the object of fewer suspensions. On the other hand, attendance rates remained the same, the dropout rate did not change significantly in terms of numbers, and no difference between the test scores of the Copernican students and the control group could be demonstrated.

Comparisons between all variations of the Copernican Plan and the 4 X 4 show no difference in either objectives or results. The difference lies only with the time of the course presentation, a difference not distinguished by many people who view both Canady and Carroll as advocates of the same concept. This confusion is amplified because the objectives and results from the implementation of each proponent's proposals are, for all practical purposes, identical.

Problems of Block Scheduling

Reform movements do not automatically draw rave reviews. After all, change represents an excursion into the

unknown. Movements toward block scheduling are no exception to this phenomenon and have attracted a number of critical reviews. Based upon his studies of efforts to reorganize schools, Hanson (1991) questions the benefits of the effort. He questions if the resources necessary to implement change are justified by the outcomes. Others are not as comprehensively blunt in their criticisms and focus on individual concerns.

Research prior to the Canady and Carroll era of block scheduling provides insight into the possibility of failure of the ideals for the innovation. James S. Coleman completed a study for Congress in 1966 titled Equality of Educational Opportunity (as cited in Pauly, 1991). Coleman found that a wider dispersion of test scores occurred within a school than between schools and that no extra resources or policies altered this intra-school range of scores. Individual teachers made a greater difference in student learning than any unilateral force affecting a school. A follow-up report by Frederick Mosteller and Daniel Patrick Moynihan in 1969 (as cited in Pauly, 1991) titled On Equality of Educational Opportunity confirmed Coleman's findings.

Additional analysis in 1972 by Eric Hanushek and Richard Murnane (as cited in Pauly, 1991) further refined the statistical methods used by Coleman to reanalyze

Coleman's data. These researchers arrived at Coleman's original conclusions. Pauly himself used Hanushek's method in conducting a study of his own in 1976, and he again arrived at the identical conclusion produced by earlier works as demonstrated by this statement from his book:

> Our discovery documented an important and powerful truth: a student who attends a particular school is not educated in the whole school; he or she is educated in particular classrooms within that school (p. 31).

Pauly further concluded that no teaching method had a consistent positive effect on learning.

Armor (1976) arrived at an analogous conclusion with his research efforts. He found that no single curriculum program and no single school design like open classrooms or teaching strategy produced differences in the levels of student learning. He did conclude that classroom atmosphere makes a tremendous difference on the levels of student achievement. Murnane and Phillips (1978) found no relationship between teaching strategy and student achievement. He did find that techniques that worked for elementary school students did not necessarily work with middle school students. A finding of importance was that teacher flexibility in adapting to the normal year-to-year changes in student characteristics produced better student learning. Furthermore, he used his data to conclude that

teachers with 14 or more years of experience displayed the strongest ability to adapt to changing student make-up and produced the greatest student achievement gains.

As with any innovation, the implementation of block scheduling has revealed problems with both the process itself and the manners in which it has been evaluated. The questionnaires that produce attitudinal data are suspect for they contain no control group and are completed by schools in their first or second year of experimenting with block scheduling (Fallon, 1995). An example of the staff surveys represented in the literature can be found in the following example from Buckman et al. (1995):

> After one semester, the internal data confirmed findings reported in the literature on block scheduling: continuity among courses, increased opportunities for interdisciplinary activities, improved grades, committed teachers and students, and a school environment more conducive to learning. Teachers reported appreciating the added time with students and students liked having fewer homework assignments each night. (p. 12)

Even the anecdotal evidence is mixed. The same music teacher (White & Hardebeck, 1996) who praised the block schedule also condemned it by relating that it contributed to mental and physical fatigue and that having music only one semester caused noticeable drops in performance skills during recitals taking place in the next semester.

An English teacher (Young, 1997) relates personal perspectives on teaching with block scheduling. This teacher teaches with an A/B schedule with a 50-minute class during the lunch period. The teacher describes the 50-minute class as the best because the students and teacher see each other every day and students do not have to sit for 90 minutes. The following words are taken from his article:

> When was the last time you had to sit still for 100 minutes to be "educated?" I have heard, and tried, all the creative and innovative things that we are supposed to do to break up the class period and make it easier for students. On paper, that stuff looks wonderful. What our great educational reformists have forgotten is that the people we are dealing with. Students need to see their teachers on a daily basis and for shorter than two-hour blocks. The block scheduling is not beneficial for a majority of students for they can only absorb so much (p. 51).
>
> Almost all of my attention and behavior problems begin with the second half of class. ...So I give them a break. Unfortunately, what you have are students who take any gesture you make, such as group situations and fun activities, and turn them into a behavioral management nightmare (52).

Other researchers found that the number of "incompletes" issued increased in one school, thus increasing the work load of the teacher during the subsequent semester (Salvaterra & Adams, 1995a). Another negative is that longer classes require more planning, a condition that consumes more of a teacher's personal time and leads to an increase in teacher stress (Salvaterra &

Adams, 1995). Even Canady (O'Neil, 1995), the chief advocate of the reform, states that if the student does not like the teacher the schedule is a bad one.

The importance of the teacher lies with other findings showing students like classrooms where they feel they know the teacher. Students do not like classes in which they perceive that the teacher is detached and treats the class as a whole rather than as a room full of individuals (Phelan, Davidson, & Cao, 1992).

Shorter school years present a host of related problems. Days lost to bad weather (or for any other reasons) have found teachers pressed for time and attempting to make up missed lessons at double time, a condition that leads to undue stress and a watering down of subject matter (Salvaterra & Adams, 1995, November). Another set of findings revealed some teachers felt that classroom preparations became more difficult because of the longer classroom session to fill and the need to determine many ways to keep the students interested. Fewer classes reduce the evenings for student reading by as much as 50%, a detail that can be coupled with the already documented cut in course content for the college bound, with the elite students taking aforementioned year-long AP classes as an exception. And, researchers and practitioners know well that

the ADHD and LD students respond best in shorter classes (Salvaterra & Adams, 1995).

Other contemplations regarding the implementation of block scheduling might be referred to as mechanical ones, details not usually well thought out, if thought out at all, before a block schedule is adopted. One must consider the accreditation issues that must be met. Accrediting agencies advance standards to which schools must adhere such as days or minutes of instruction and course content. Transfer issues present a huge headache. How does a system on block scheduling accept a student from a system not using block scheduling without punishing that student for making the transfer? How can the reverse situation be handled? In order to adjust to the longer class period, teachers must develop a pacing guide adapted to the new schedule to meet the curriculum objectives established by the state or local school unit (Shortt & Thayer, 1995). Smaller schools may not benefit as much as large schools for their limited faculty size has trouble offering the electives possible under the block scheduling concept (Redesigning, 1995).

The implementation of block scheduling cannot occur in isolation and with total disregard for the interrelationships of all other elements of the school environment. This scheduling design does not represent a

complete systematic change within itself. The implementation of block scheduling must not come at a great cost to other school goals like community outreach programs and technology competencies. Reformers cannot create a new school design by simply manipulating one piece of a large puzzle and expect all other pieces of that same puzzle to reshape themselves to accommodate the single piece. The reformers must consider how the anticipated results of block scheduling mesh with other goals and objectives established by leaders of a school or school system (Cawelti, 1995).

McPartland (1987) seconds the notion that time is not a distinguishing factor in a school setting. According to him, time interacts with other features of the school environment such as climate, governance, staff development, and technology. Failure to consider such multiple interactions provides one insight into why questions related to the best way to organize a school are often accompanied by a host of answers that do not readily produce anticipated or desired outcomes.

Too many times block scheduling has been implemented without consideration for the stakeholders and the insight that they might provide (Scroggins & Karr-Kidwell, 1995). One must recognize that what is good for one student is not necessarily good for another. The same conclusion can be

drawn for teachers. Educationists must go beyond the logic that A = B and that instructional time alone will construct a more successful learning environment. High schools are tied to the Carnegie Unit and its accompanying requirements; elementary schools and middle schools are not. What works for one setting will not necessarily work for another (Kruse & Kruse, 1995).

One major criticism of the block schedule is that the length of class time exceeds the attention span that most students are able to muster. There is evidence that attention span declines after 30 minutes and that performance cannot be improved beyond this point regardless of any increase in performance resources (Parasuraman, 1979). Parasuraman's study involved radar operators sighting incoming targets, what may be viewed as an authentic practice or hands-on activity or even a life threatening one that should maintain one's attention.

This finding was reinforced when other researchers found that students kept an attention to the lesson that lasted through 50-70% of a class period and that this attention fluctuates due to time of day and other factors. This study was conducted on a traditional class period and translates into an optimum 70% attention span equaling about 35 minutes of a 50-minute class period (Stallings, 1985).

Stallings' work makes observations about unspecified off-task behavior, but makes no distinctions between instructional practice and creative or hands-on tasks.

Kossowska and Necka (1994) found that attention span is an element of individual differences. One's attention lies with a combination of the aptitude to analyze, the capacity for memory, and the ability to focus. One researcher (Humphrey & Kleiman, 1982) defined attention as the amount of processing capacity to be deployed to a given task, a definition implying that having someone's complete attention is not possible. Another finding was that attention maintenance is affected by distractors and that the influence of distractors is a function of age, maturity, and other factors.

A recent report indicated that instructional strategy has no effect upon retention (Semb & Ellis, 1994). These researchers found retention to be affected by practice and taking a series of courses that reinforce one another increases a student's ability to retain and apply knowledge. They found that high ability students retain more than low ability ones. They did find, however, that individualized instruction and possibly peer tutoring may help low ability students retain knowledge. They also found that retention decreases over time if the knowledge is not used, hence the

need for sequential courses that reinforce one another in some manner. The implication here is that electives, one of the primary advantages of block scheduling, do not promote retention unless those electives are extensions of subject matter already consumed by the student.

Attention span must also be considered with the concept of memory. Gordon (1995) has studied research on the topic of memory formation and completed his own inquiries regarding the question of memory formation. He finds that it takes time for memories to harden and become permanent. This process may take days or weeks. Considering this perspective on knowledge retention, one must consider the wisdom of replacing the sometimes redundant nature of year-long classes with the faster-paced method of the semester class.

Combining all this knowledge with the awareness of interferences in learning raises questions about longer class periods. Proactive interference causes mental conflict with previously presented information, a conflict that reduces attention. Retroactive interference reduces earlier learning, or takes precedence over it and thus reduces the anticipated connectedness of learning situations. Coactive interference arises when information processing systems operating simultaneously impair each other and lead to incomplete constructions or confusion. The implications of

this knowledge is that elaborations divert attention away from the important points of the lesson and actually hinder learning or in-depth understanding. This may well mean that the elaborations found in longer classes would be of little or no value (Dempster, 1993).

On the other hand, block scheduling advocates may cite findings by Jacobson (1993). He found that presenting material in multiple contexts (multiple instructional strategies) better prepares students for using a particular skill and transferring knowledge from one setting to another. Interpreting these results is hindered by the failure of the published article to provide the time durations of instruction during the various stages of the research effort.

Lecturing represents a primary target of the block scheduling proponents for they wish teachers to reduce their instructional reliance on lecturing by employing a greater variety of teaching strategies, mostly those involving some form of group activities. Research has revealed that lecture presentations are sometimes favored. The less capable student prefers lectures as do students studying highly technical, unfamiliar topics. Lectures are good for introductions, demonstrations, and modeling (Henson, 1980). Larsen (1991) completed studies that led him to arrive at a

similar conclusion finding no real drawbacks in teaching and learning accompanying the teaching methodology of lecturing. He concluded that instructional strategy has no influence on recall and students recall best what they are told to recall.

Another major criticism of block scheduling lies with the absence of a definition or consensus concept for the term "teaching flexibility." This absence of a true meaning for this concept provides no means by which to distinguish flexible from inflexible or creative from ordinary teaching nor any manner by which to measure these concepts (Flanders, 1985). Critics use this detail to claim that block scheduling represents a mere time adjustment that simply does the same thing to children, only longer and harder (Kruse & Kruse, 1995).

One report issued by the North Carolina Department of Public Instruction (Semester, 1994) pointed out that only 2.2% of the teachers surveyed believed they were not trained to teach in a block schedule. One might infer from this that approximately 98 out of every 100 teachers found that teaching methodologies in the traditional classroom proved adequate for the block scheduling classroom.

One measure of teacher flexibility advocated by block scheduling promotes the use of forms of cooperative

learning. Turley (1994) found that students themselves may not appreciate this. After interviewing high school seniors, he found that they usually preferred individual work and problem solving to group oriented assignments or projects. The student responses were based upon personal experiences that found the person willing to do the work was routinely left to do so by other members of the group. Students did not appreciate being subjected to this ever-present threat of being assigned to or becoming a part of an unproductive group.

Turley further found that students were fully aware of various teaching strategies used by their teachers but did not prefer one over another. Instead, these students preferred teachers with specific traits; a sense of humor, a helping nature, knowledgeable, and organization, to name a few.

Wagner (1995/1996) concluded from his research that schools undertake changes like block scheduling with little or no discussion about the problems these initiatives are supposed to solve or how the results will be assessed. Totally omitted from the process are the students who often have striking insight into the strengths and weaknesses of the school. As one school district contemplated block scheduling, the students wondered how they would preserve

interest in the longer classes when they had such trouble with the shorter ones.

Canady and Rettig (1996) have tried to address some of these concerns. They now recommend year-long classes for AP students and possibly for band students. They offer additional suggestions such as pairing AP with college prep classes on an A/B schedule and giving half units of credit. This latter proposal comes with the suggestion of having half a semester for one class and the next one-and-one-half semesters for another class. Canady and Rettig also advance the alternatives of three blocks and two short periods during the day and an independent study for seniors to allow them to prepare for their nationally normed tests. Another idea is to have two shorter semesters with an intersession period somewhere in the school year. The calendar would look like some variation of the 75-75-30 days per instructional period. This intersession period can be a short course, a course repeat for those who need it, and may consist of blocked or full day presentations. The full day presentations would allow field trips, since no one else's class would be disrupted.

During the same presentation, these two gentlemen state that teachers teach less material and insist that teaching less in greater depth is better teaching. They *imply* that

the innovative teaching techniques will produce the extra learning and then, ironically, speak to adding another math (or some other unit) credit requirement to the graduation standards to make up for the material not covered in the two shorter required classes.

The concept of attention span is addressed in an effort to place blame for inattentive students. In another presentation of their ideas, these gentlemen declare that a teacher who is unable to keep the attention of students for 50 minutes, much less 90 minutes, is the problem, not the inattentive students. They then relate the need for breaking the classes into segments of 20 minutes.

Rettig (Restructuring, 1997) made several assertions during his symposium presentation. He claims that attention span is a problem with the A/B schedule, an alternative he admits not favoring, but not with the 4 X 4 design. Rettig also advances teaching techniques for block scheduling. A basic design included the following sequence; homework review, presentation, demonstration, activity, guided practice, reteach, and closure. He also indicates that additional media materials and resources are needed, an assertion that seems to conflict with much shorter instructional time available for course work and more in-depth classroom strategies during this shorter instructional

period that do not relate to the media center. Rettig (Rettig, 1997a) also strongly advocates cooperative learning, inclusion or heterogeneous classes, and paideia seminars (Rettig, 1997b).

Finally, Rettig complains that when comparisons of blocked and non-blocked schools are made the socioeconomic status of schools is not considered. He relates that block scheduled schools are low SES schools and should be compared to schools of similar SES status. His rationale lies with the fact that the parents of high SES schools generally will not allow block scheduling into their schools. The North Carolina report (Blocked, 1996) recognizes that most block scheduled schools possess a "somewhat lower SES" (p. 4). SES seems to be an important element of the overall effectiveness of schools. Berliner and Biddle (1995) indicate that "studies provided overwhelming evidence for the positive school effects of funding..."(p. 74). These authors do not mention block scheduling.

This controversy is a chicken and egg one that is still unresolved. Steinberg (1996) finds what Coleman and others found before him. That is, factors outside of school strongly influence the institution's effectiveness. One of these factors lies with the disengagement of parents with both the parenting and the schooling of their children.

Disengaged parents do not normally come from high SES groups and do not frequently provide great support for the schools their children attend. All that can be declared with certainty is that lower SES schools generally perform more poorly on standard measures of performance such as standardized test scores and dropout rates. The cause of this phenomenon is still being debated.

Other Studies of Scheduling and Teacher Methodology

A central theme advanced by advocates of block scheduling lies with the premise that there is a need to alter the delivery of educational services to our nation's youth. Advocates believe that a change in the length of the class period will by necessity influence the manner by which teachers teach.

Influences on teaching methodologies have been studied by others. The total of research in the area of selection of a teachers' instructional strategies indicates that there are many elements involved in the methodology selected by a teacher for a class other than the length of the class period. Dreeban and Gamoran (1986) found that teachers vary instruction according to the time allocations and the resource allocations of the principal. Do morning people get morning classes to teach? Who gets the late afternoon classes? Who gets the globes or the calculators? Dreeban

and Barr (1988) further found that the social and ability grouping of a class affects the delivery of instruction. O'Reilly's research (1988) uncovered additional factors that affect teaching methods. He found that the best teachers usually get the best classes, thus promoting the tenet that mediocrity begets mediocrity. Direct considerations of teacher methodology include the placement of the class with regard to outside noise such as the volume of traffic or bathroom sounds, the sequence of classes and placement of the teacher break or planning period, whether the student composition is of morning or evening people and what time the class is held, and the rate of student turnover.

Doctoral Dissertations

Dissertation work on block scheduling is sparse. Most work comes from the University of Virginia where Canady teaches and is cited by him in his publishing endeavors. Doctoral students from other schools of higher learning completed their dissertations primarily during the 1970s, and most of these studies related to flexible modular scheduling, a form of block scheduling not a part of the current variations of the scheduling practice.

One study, not from the University of Virginia, found a rise in pre/post test scores but no change in student attendance, motivation, or disruptive behavior (Cox, 1994).

Grater (1975) found only positive results in student achievement. She compared two graduating classes, one that had been taught under the traditional scheduling methods and one that had attended school under block scheduling. She found that grades for students under block scheduling were higher and these students received more credits. These students also earned higher ACT and ITED scores. Grater did not compare the two groups for any similarities or attempt a longitudinal study. No attempt was made to determine if the results from these single class comparisons were representative of each school's documented long term achievement score results.

Albers (1972) studied pre/post scores for students taking biology and geometry with block scheduling and the same courses with the traditional schedule and found no difference in the scores. Furthermore, he found that student preference for block scheduling depended upon the teacher the student had and that student support for the schedule began to wane in the second semester. Students preferred additional learning opportunities but perceived no teacher/student relationship advantages.

A more recent study pertained to the school climate within schools that had adopted block scheduling in the eastern region of Tennessee (Dugger, 1997). The study

analyzed school climate using a standardized inventory. Teachers and principals reported no effect to some positive effect on the way students learn and no effect to some positive effect on the way teachers teach.

A second study pertained to block scheduling and staff development (Mullins, 1997). The conclusions of this study indicated that teachers with more experience and with higher university degrees felt that block scheduling had a more positive effect on student testing and grades.

Few dissertations are available that discuss the forms of block scheduling used today, either the double period class of the semester or the alternating day design. One may only surmise why the flexible schedule received the greater proportion of attention. Literature reviews do not provide a clue.

Conclusion

An analysis of the literature raises many questions about how teaching and learning may take place within block scheduling but does not provide any answers. This researcher believes that these should not be rhetorical questions, but ones that must be addressed. No serious studies have yet been undertaken to answer any of these questions.

One must consider that like Moses, Copernicus was a voice in the wilderness. Are Canady and Carroll preaching a

message one needs to heed? History has revealed more than one messenger whose message was not taken seriously. This researcher will attempt to discover if one or all of the principles advanced in the literature relating to classroom practices of teachers and improved student learning are taking place and to gain insight into the depth and breadth of any changes that are occurring in the classrooms operating with block scheduling. Available information testing the implementation of block scheduling principles is noticeably sparse. The education community truly needs information from an independent source regarding the fulfillment of any and all ideals advanced by the propcnents of block scheduling.

CHAPTER 3

METHODS AND PROCEDURES

All inquiry begins with data collection. This is natural for inquiry seeks answers, answers require a knowledge base upon which to conceive an answer, and the data collected provide that knowledge base. Knowledge may be gained in mainstream life situations through casual conversation, sensory experiences, and the media. Our daily lives are filled with the gathering of data, bits of information that shape our values and perceptions of events and attitudes. One cannot live without subjection to a continual stream of information originating from one source or another.

Research inquiry requires information. The difference between daily inquiry and research inquiry is that in the latter instance, one actively seeks knowledge. In the former instance, one passively seeks knowledge by turning on a television, for example, or by receiving the information via any other environmental source. This study represents research inquiry and this researcher actively sought the data needed in an attempt to answer the questions posed. The type of answers sought are not as readily available as those found on the editorial, societal, or sports pages of the

newspaper. Knowledge sought from this research effort represents that emanating from a narrow range of the population, those directly involved in the professional practice of teaching.

Population

The focus of this study lies witn the practices block scheduling advocates promote as justifications for their school organizational plan. There exists one group of people who seemed better qualified to answer the questions posed by this research effort--professional educators who worked with both the traditional schedule and block scheduling. For the purposes of this study, the population has been limited to secondary school teachers, music instructors, guidance counselors, and media specialists. This researcher excluded all secondary school administrators as well as faculty from private high schools. This predetermining of criteria upon which to limit the population is referred to by Patton (1990) as criterion sampling. This researcher dutifully excluded responses submitted by school personnel who completed questionnaires but failed to meet these predetermined criteria. The sample was further limited by the number of professional educators who voluntarily participated in this study.

Sampling Method

Public schools using block scheduling were selected for study. Teachers, guidance counselors, media specialists, and faculty involved with music constituted population targets for the research. This researcher wished to limit the study to those school faculty whose primary responsibilities focused on providing services to students.

After receiving approval from the principal of each school used for the distribution of the inquiries used in this study, questionnaires were distributed to the school site and placed in staff mailboxes of the targeted participants. In six instances, the questionnaires were distributed with self-addressed, stamped envelopes and participants voluntarily returned them via the United States Postal Service. A volunteer teacher at four school sites to collected the questionnaires and returned them to this researcher. The researcher himself collected the questionnaires from the final site as the volunteer participants completed them during a teacher work day.

The researcher received permission from 11 high schools representing eight school districts found in four states. One school is located in rural Virginia about 40 miles from Bristol. Two schools are located in South Carolina, both part of the same seven-high school district just across the

border due south of this researchers residence. One is a school in a small town in Tennessee about 40 miles north of Johnson City. Seven schools are in North Carolina. Two of these schools are suburban and are located near Asheville, part of a six-high school system. One is an urban high school near the residence of the researcher, the only high school of the district. Two schools are not quite rural and not quite suburban and are located 25 miles south of Asheville, representing two of a four-high school district. One is located about 25 miles east of Asheville serving students from an entire county that is mostly rural. The last one is about half-way between Asheville and Charlotte, a suburban school part of a four- high school system.

Of 847 questionnaires distributed, 754 went to teachers, 32 went to staff in music departments, 20 went to personnel in media centers, and 41 went to guidance counselors. Eleven media, 21 music department, 23 guidance, and 340 teacher questionnaires were returned for an overall return of 395 or 47%. This researcher did not make follow-up visits to schools seeking a greater return rate.

Research Questions

Research questions for this inquiry are derived from the advantages of block scheduling as presented by the reform advocates identified in Chapter 2. This researcher

was hopeful of discovering which of these advantages are identified by the respondents and whether the functions of block scheduling are cited in a positive or negative context. This researcher also wished to determine which of the changes advanced by block scheduling theory for both teacher practices and student learning have occurred. Questions are punctuated by "Why?" to determine if changes derived from anticipated advantages of the organizational concept presented by block scheduling, as an unanticipated result of these changes, or for some other reason(s).

The research population was asked to compare their personal teaching practices and perceptions of student learning as they remembered them from teaching in the traditional scheduling to their practices and perceptions observed while currently teaching in block scheduling. The following research questions for teachers provide the framework for this study:

1. What teaching techniques, if any, have you adopted for teaching in block scheduling that you did not use while teaching in the traditional schedule? Why?

2. With block scheduling, have student grades risen, fallen, or remained the same? Why?

3. With block scheduling, has student classroom behavior improved, remained the same, or worsened? Why?

4. Are lesson preparations for block scheduling more difficult, about the same, or less difficult than those prepared for the traditional class? Why?

5. Has teacher collegiality improved, declined, or remained about the same? Why?

6. Is more, less, or about the same subject matter covered during a semester? Why?

7. Is subject matter covered in more depth and breadth, less depth and breadth, or about the same depth and breadth? Why?

8. Do you perceive that your students are learning more, less, or about the same as they did with the traditional schedule? Why?

9. Are student projects more thorough, less thorough, or about the same as those submitted with the traditional schedule? Why?

10. Do you give assignments that make greater use of, less use of, or about the same use of the library? Why?

11. Has the quality of interschool competition improved, remained about the same, or declined with block scheduling? Why?

12. What aspects of block scheduling do you appreciate the most? Why?

13. What aspects of block scheduling do you find most troubling? Why?

The questions for guidance counselors pertain to the same topics and read as follows:

1. Are there differences with the academic guidance necessary with block scheduling from that seen with the traditional schedule? Why?

2. Are there differences in the problems regarding student behavior with block scheduling than were found with the traditional schedule? Why?

3. Are there differences in the problems faced with teachers with block scheduling than were found with the traditional schedule? Why?

4. Are you perceiving a difference in a student's ability to function academically in the classroom with block scheduling? Why?

5. Are you perceiving a difference in a student's ability to behave in a classroom with block scheduling? Why?

6. What aspects of block scheduling do you appreciate the most? Why?

7. What aspects of block scheduling do you find most troubling? Why?

Questions concerning media specialists are specialized for that particular subject matter. They are fewer in number than those for teachers and are designed as follows:

1. Are there differences in the manner in which the library is used with block scheduling compared to the manner it was used with the traditional schedule? How do you explain these perceived differences or absence of differences?

2. Do you perceive the library being used more or less frequently with block scheduling? Why?

3. What aspects of block scheduling do you appreciate the most? Why?

4. What aspects of block scheduling do you find most troubling? Why?

Canady and Rettig (1996) cited persons associated with band programs as particular critics of block scheduling. As a direct result of that special attention, music departments need to be addressed as specifically as librarians. Questions to these faculty are as follows:

1. Is student participation in band or chorus greater, less, or equal to that observed with the traditional schedule? Why?

2. Are the performances given by the band or the chorus of better quality, lower quality, or about the same as those performed with the traditional schedule? Why?

3. Do you perceive that your instruction is enhanced with block scheduling? Why?

4. As a band director or choral instructor, what aspects of block scheduling do you appreciate the most? Why?

5. As a band director or choral instructor, what aspects of block scheduling do you find most troubling? Why?

Research Design

Patton (1990) states that basic research is judged by its contribution to theory and explanations of why things occur as they do. Such observations can be naturalistic, based upon experiences and insight, and need not be objective in nature. Naturalistic inquiry can produce information just as valid and explanatory as conclusions drawn through strict scientific inquiry. The research

community now commonly accepts the premise that not all questions can be answered using the scientific method. Naturalistic or qualitative inquiry provides a means of studying problems that the scientific method of inquiry cannot address.

According to Brophy (1995), one factor determining the research method one must use is the type of data needed. The data needed for this effort cannot be objectively measured for there is no accepted definition for such terms as "more" or "depth of learning" or "flexible." Information required to answer the questions posed by this study does not lend itself to a deductive, hypothesis-oriented approach.

Knowledge sought with this research effort accomplishes what Patton (1990) describes as the most useful of all human capacities, the capacity to learn from others. Jacob (1989) describes this form of inquiry as expansive for it does not proceed encumbered by predetermined categories and therefore generates more new viewpoints and raises more useful questions for further consideration. Jacob also reminds us that qualitative inquiry has a history with a following and credibility as a legitimate research practice.

The nature of qualitative inquiry is that it cannot be specific in advance of any fieldwork. All categories of analysis emerge from the open-ended observations as the

researcher comes to understand the patterns. Neither the conditions of study nor the variables are controlled. The data itself will provide the categories and interrelationships.

This qualitative research effort is comprised of questionnaires. Questions are worded in such a way that permits the respondents to use their own perceptions to formulate answers, all of which seek some level of narrative. The purpose is to allow, as Carter (1993) explains, the raw data of the respondent to construct an interpretative story. One question contains more than one idea, for these concepts were combined by the proponents of block scheduling. The question for teachers involving the combined concepts of "depth and breadth" ask respondents to compare two concepts. Other questions contain only one idea.

Materials and Procedures

The first step in proceeding with this research effort involved acquiring an exemption from the Institutional Review Board. This exemption was granted and the Board assigned this effort the number 96-167e. This researcher then advanced to the next step in the research process by gaining permission from the appropriate principals to distribute questionnaires to the faculty of the schools selected for study. Copies of these permission letters are

found in Appendix C of this dissertation. Also found within Appendix A are the questionnaires provided to each segment of the faculty selected for participation. Each questionnaire distributed was accompanied by a letter of introduction of this researcher describing briefly personal identity, the purpose of the survey, what was requested, a plea for voluntary participation, and the deadline for completion.

This researcher conducted a pilot study following this procedure. After being granted permission by a principal to place the questionnaires in the faculty school mailboxes, the researcher delivered the letters and questionnaires with stamped, self-addressed envelopes for distribution. The principal's secretary insisted on placing the correspondence in the mailboxes herself. By the deadline established in the introductory letter, 36 of the 93 instruments were returned. Though the return rate was small, the accompanying responses did provide insight regarding future problems if some questions were not changed. Three items appeared confusing to the respondents and were significantly reworded in the hopes of eliciting responses appropriate to the topic. A fourth item underwent a minor change. The original wording of these questions proved confusing or misleading to the participants.

This researcher then embarked on the goal of gaining permission from other school principals in order to complete the major phase of the field research. Written requests made to school principals were ignored. This researcher made personal appearances at schools and asked the principal for permission. These requests were usually granted and questionnaires were then distributed. This researcher gathered the surveys as they arrived by mail or were collected by a site volunteer and began analyzing them for categorical responses. All available data were then analyzed and subdivided into appropriate categories for a content analysis.

Questionnaires returned had many of the questions unanswered. Occasionally, one of the demographic categories would be blank. There seemed no pattern to the questions not answered. Most respondents answered with phrases or a series of phrases, not complete sentences. Some used the same single word to answer all but questions seventeen and eighteen. Consequently, a different number of responses were recorded for each category and question. Table 18 reveals the problem with arriving at consistent totals. This table displays 12 respondents in the category of gender for School 1 and 13 respondents in the category of subject area. One respondent did not indicate gender on the questionnaire.

Yet, with the smallest return for a question at 164 for a question subjected to statistical analysis (100 for the optional additional responses to "comments"), ample replies were gathered to meet the minimum size requirements of the chi-square test, indicate trends, identify differences in schools, and generate assumptions. Two questions were not subjected to analysis for reasons to be explained in Chapter 4.

For each questionnaire, demographic questions preceded the research questions. The complete questionnaire is found in Appendix A. This researcher sought gender, subject area taught, years of experience, years of teaching with block scheduling, and level of education. These data were coded numerically for each response directly responding to the order of the possibilities for each category. In other words, a respondent who checked as a science teacher would be a "3" on the coded data for subject area taught.

All responses for questions seven through fifteen and for the open-ended item titled "Comments" were coded as a negative (1), positive (2), or a noncommittal or same response (3). These numbers are used on the tables to identify the nature of the remark. This researcher assigned the code according to the initial statement of the respondent without regard to the accompanying explanation.

This method of coding proved simple except for two questions. Question 6 asks for new teaching strategies. A neutral code was assigned for all responses using the words "more" and "less" in the answers. A neutral code was also assigned if a technique was named but no reason was provided. Reasons provided the code for this question. As an example, cooperative learning is a neutral response for it stands alone, while cooperative learning because time permits is a positive response because it implies better teaching and cooperative learning to fill time would be a negative response for it implies no attempt at better teaching.

The other problem question is number 12. The word "more" is a positive response for it is inclusive of both concepts. A response of "more depth but less breadth" is neutral response for it has trade-offs.

Codes from each question were combined into a single file representing data for that question. After two months of purposely avoiding contact with the data, this researcher reviewed all the codes to ensure the consistency of coding according to the ideas presented and to eliminate researcher bias. Several codes recorded as each school's data were collected needed recoding to ensure this consistency before the statistical analysis could be performed.

Gathered data represented nominal data. All numerical codes represented information that could not be deemed normally distributed, standardized, or ranked. The only statistical test that can be performed on such data is the Chi-Square Test. Requirements for using the chi-square are that all data must have been randomly selected, data must be in nominal form, all data have an independent cell entry, and no value for expected frequency must be less than five (Sprinthall, 1994). This test determines whether frequency counts are distributed differently in different samples (Gall, Borg, & Gall, 1996). The null hypothesis was that no relationships would exist between any two categories subjected to analysis.

The data for the questions answered by teachers were subjected to this analysis using SPSS for Windows, version 7.0. Chi-square analysis was performed with the category of "Remark," which is the codified value provided for the nature of the answer as described on the bottom of page 74, against all other categories: gender, subject taught, years of teaching experience, years of teaching with block scheduling, level of education, and the school. Responses from media, music, and guidance personnel were so few in number that this analysis could not be performed. This researcher selected a level of significance of .1.

Reports for the research participants of guidance counselors, band instructors, and media personnel are reported separately. These faculty are on the outside of the classroom and have different perspectives than the classroom teacher. Their stories will be compared to the tales related by teachers for insights they may contribute to the understanding to the actual results of block scheduling implementation.

Difficulties in Acquiring Data

This researcher wished to pursue a quantitative study of block scheduling. Preliminary inquiry into this possibility proved fruitless. North Carolina end-of-course tests had all been changed within the past five years. This eliminated within school comparisons of pre-block scheduling and block scheduling for the comparisons would not be of the same tests.

Disciplinary data comprised the second layer of information sought. Administrators in the district office in this researcher's community related that they do not keep such statistics; the schools keep their own. The schools related that their information was uniformly distributed to the district office and not housed at the school site. Such declarations provided this researcher with the conclusion that this information could not be obtained.

Scores on the SAT tests surfaced as another alternative. However, students in the local schools have semester classes for most students but year-long, two semester classes for Advanced Placement students. A logical comparison would have been to compare the two groups but would require access to the records of individual students over a period of years. To gather representative data, one would need to compare the Advanced Placement students of pre-block scheduling years with the AP students of block scheduling due to the latter group's obtaining more instruction time before their test. The same would be true for non-AP students for under block scheduling they receive fewer hours of instruction than they did with the traditional schedule. This would have proved a massive undertaking requiring access to individual student records and beyond the scope of review for this research effort.

This researcher also ruled out the research technique of direct observation. For this researcher to determine any changes in teaching practices or degrees of learning in a particular classroom would require prior knowledge of the teacher's practices while teaching in the traditional schedule and of student depth and breadth of learning in that classroom during that time. Direct observation proved an inappropriate method.

Most schools had conducted in-house surveys using some form of a Likert scale. However, there is no indication that these surveys eliminated from participation those faculty who had never participated in the traditional schedule. These surveys seem to be dominated by first semester or first year use and lack the longitudinal merits of a two or three year reflection. These surveys completed at the various school sites do not ask the same questions using the same wording or use the same scale for measuring satisfaction or dissatisfaction. Therefore, such results may be used for generalizing initial staff perceptions of block scheduling but are not valid for analysis for the purposes of this researcher.

With the elimination of unusable or unworkable research methods and available data, the qualitative approach relying on the self-perception reporting of volunteers proved the most viable means by which information could be gained to answer any or all of the questions posed by this research effort.

Conclusion

According to Patton (1990), basic research represents a search for knowledge as an end in itself. It focuses on questions of one's personal and professional discipline interests and contributes to theory. Due to the near void of

information regarding teacher and student practices and outcomes as they relate to those theorized by advocates of block scheduling, this research effort is designed to contribute to the field of knowledge regarding this innovative school organizational design and how this scheduling concept affects workings at the basic levels of the school.

Patton (1990) makes the following statement: "There are no rules for sample size in qualitative inquiry. Sample size depends upon what you want to know" (p. 184). Though no rules on sample size exist, this researcher sought a large sample in the hopes of acquiring a repetition in the nature of answers that would indicate a general trend of thought among the sample.

The selection of the qualitative methodology came with trade-offs. The number of categories for study was limited not by design but by the information received. On the other hand, this form of inquiry permits the study to be more in-depth. The research design of this study does allow an expansion of interpretation beyond the mere numerical significance of a category to the "why" or "how" questions through reliance on the human story for information.

This research endeavor includes an objective component as indicated by the codification of data and the

administering of the chi-square analysis. This analysis provides access to information that qualitative data may not readily indicate, differences of opinion between the demographic categories of respondents. Objective analysis can illustrate significant differences that could prove important to the overall conclusions of this research effort. This potentially important role of objective analysis explains why this research effort involves a combination of qualitative and quantitative efforts.

As Salvaterra and Adams (1995, November) stated, "An important lesson of this study is that the future success of an intensive time schedule, or any major change, may hinge more on teachers' perceptions of the change that its actual merits" (p. 35). The importance of perceptions in research cannot be overstated. Perceptions provide a sense of worth for a program and perceptions provide insight into the nature and inner workings of the program. Perceptions gained from others can teach and provide perspicacity. Data gathered by this research effort accomplish this. This accumulation of data also raises additional questions that need to be answered.

CHAPTER 4

REPORTING THE RESEARCH DATA

Data gathered represent useless data until that information is sorted into appropriate categories, analyzed for content trends, and interpreted for meaning. This researcher will present the data and interpret that information in this chapter. Tables representing chi-square analysis are presented. Each primary research question is addressed as a separate component of this presentation. Specific questionnaire items pertaining to that research question appear individually as components of the research question. An analysis appears at the end of each section.

Following the discussion of the three research questions, three more categories of information are reported. Open-ended questionnaire items are presented as an individual section of this reporting effort as are the reports from respondents who are not teachers. The final reporting effort represents topics that arose from the analysis of the responses but were not anticipated by or included in the questionnaire items.

Because written requests by this researcher for permission were not answered, personal appearances at those schools were made to seek permission. This researcher gained

permission from 11 school principals to distribute the questionnaires to teachers. Information representing the size of the student population of each school and the number of years that school had operated on block scheduling can be found in Table 1.

TABLE 1

SAMPLE SCHOOL SIZE AND YEARS ON BLOCK SCHEDULING

SCHOOL	STUDENT POPULATION	YEARS USING BLOCK SCHEDULING
1	1139	2
2	1242	2
3	1021	1
4	794	4
5	1132	3
6	712	3
7	1355	4
8	1094	4
9	1215	1
10	960	2
11	889	3

The return rates for questionnaires by school are indicated in Table 2. This table presents returns by instructional personnel and noninstructional personnel and provides percentages of return.

TABLE 2

RETURN RATES BY SCHOOLS

SCHOOL	TARGETED SAMPLE OF TEACHERS	PERCENT OF TARGETED SAMPLE OF TEACHERS	TARGETED SAMPLE OF NON-TEACHERS	PERCENT OF TARGETED SAMPLE OF NON-TEACHERS
1	82	41	11	36
2	90	46	8	50
3	71	34	9	44
4	47	100	6	83
5	86	38	9	22
6	50	52	8	75
7	92	37	10	60
8	60	32	9	67
9	56	48	8	63
10	62	40	8	38
11	58	52	7	71
TOTALS	754	45	93	59

Missing demographic data provided one problem with analysis. Another problem pertained to the participant's completion of the questionnaires. Not every respondent elected to respond to every question. Table 3 is designed to display the total number of responses by teachers to specific questionnaire items that have been subjected to chi-square analysis. These numbers can be compared to the total of 340 questionnaires returned as shown in Table 2.

TABLE 3

NUMBER OF PARTICIPANT RESPONSES PER QUESTION

QUESTION	NUMBER OF RESPONSES PER QUESTION
7	209
8	192
9	211
10	200
11	218
12	209
13	198
14	183
15	182
COMMENTS	100

Table 4 includes the number of responses to questionnaire items without accompanying explanations and is divided between core and noncore teachers. Table 4 does not include samples from the categories of school personnel from outside the classroom. Core academic teachers are considered throughout this research effort as being those who teach the first four categories of subject area on the questionnaire--social studies, language arts, science, and math. The purpose of this table is to provide the reader insight as to how this number of nonresponses could skew the chi-square analysis and contribute a distorted quantitative picture.

TABLE 4

NUMBER OF RESPONSES WITH NO EXPLANATION

RESPONSE / QUESTION	NEUTRAL	POSITIVE	NEGATIVE
7 core	36	4	1
7 noncore	19	1	1
8 core	40	1	0
8 noncore	15	5	1
9 core	20	1	1
9 noncore	13	4	0
10 core	61	7	3
10 noncore	23	1	0
11 core	16	1	5
11 noncore	6	1	2
12 core	36	3	4
12 noncore	15	2	2
13 core	29	1	4
13 noncore	7	5	1
14 core	47	3	3
14 noncore	13	2	0
15 core	53	2	1
15 noncore	20	1	0

The First Research Question

The first of these questions is, "Have teachers who worked with the traditional schedule and now work with some form of block scheduling changed their instructional

practices?" Advocates of block scheduling have made an outstanding issue of the need for teachers to change their teaching methodologies and the constraints that block scheduling will impose on teachers to change. To investigate this particular concept advanced by block scheduling theorists, this researcher assigned three specific items from the questionnaire.

Questionnaire Item Six

> Question six: What teaching techniques, if any, have you adopted for teaching in block scheduling that you did not use while teaching in the traditional schedule?

Question six pertains directly to the first research question but was not subjected to statistical analysis because of the overwhelming presence of one word appearing at the onset of each response, "more." Respondents repeatedly used this term to describe employment of more cooperative learning, more videos, more labs, and so on. Occasionally, the word "less" appeared questionnaire, usually associated with the teaching strategy of lecturing. A total of 209 responses were recorded to this question with 110 answering "more" or "less" and 55 answering "none" or "same." This represents 80% of the respondents indicating no new teaching techniques. This researcher deemed that overall response to be representative of the sample.

Among the other 20% of answers are teaching techniques not asscciated with the terms "more" or "less." These include giving stretch breaks, speed teaching, seminars, and "I give students the test before they take it."

Several answers reflected the added use of time fillers. Fifty-four core teachers provided an explanation for their response. Twenty-eight or 52% indicated using varied activities as efforts to fill time, not as instructional techniques. Sample responses include more varied activities to fill time, cooperative learning to reduce boredom, cooperative learning to fill the time, breaking up time to keep kids awake, more gaming to take care of the extra time, and more group work because kids get tired and need to talk to each other.

On the flip side, 15 or 28% of responses indicated the ability to implement more group work because there was more class time. These responses did acknowledge using activities as instructional techniques.

Similar results are derived from noncore teachers. Nineteen of these teachers offered explanations. Nine of these 19 (47%) indicated the need to fill time. Five or 26% indicated the ability to vary or add activities because of the extra class time. Several answers produced ideas similar to the following two sample responses; "breaking up the

period with diverse activities" and "less lecture, a variety of activities." No respondent ever defined what these activities might be.

Questionnaire Item Nine

> Question nine: Are lesson preparations for block scheduling more difficult, about the same, or less difficult than those prepared for the traditional class? Why?

This question was used to evaluate teacher methodology because instruction is preceded by planning. The level of planning often dictates teacher preparedness for a classroom presentation and thus dictates the completeness and complexity of that lesson. Table 5 displays the statistical data resulting from the chi-square analysis of the demographic data for respondents of this question. A table with this information will follow each statistically analyzed question.

The rule of thumb for evaluating the chi-square test is that if a large chi-squared statistic is accompanied by a small significance, a relationship is likely (Norusis, 1991). This author goes on to state, "You must look at the actual percentages in the table to determine whether the observed differences are of any practical importance" (p. 270). According to Norusis, "Chi-squared based measures are difficult to interpret" (p. 306). Tables of chi-square test

results for questions subjected to the test display levels of significance at the .1 level.

Chi-square can only analyze data with categories containing equal cell counts. Empty cells produce cases that are not compared. Several questionnaires were returned with missing demographic information. Therefore, cases with missing data had to be removed from the data file before undertaking the chi-square analysis. However, every response regardless of missing demographic data had a coded response value (negative = 1, positive = 2, and neutral = 3) assigned by the researcher. This codification is noted as "remark" throughout this work.

TABLE 5

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 9

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	5.333	1	.021*
SUBJECT	63.844	8	.000*
EXPERIENCE	109.156	2	.000*
BLOCK	121.979	4	.000*
EDUCATION	156.854	3	.000*

p = .1

The Null hypothesis is rejected in every instance of this research effort. A formal declaration to this effect will not be made with the report for every question. Because

the chi-square requires at least five cells for comparison, an analysis between the coded value of the explanation and the category of school could not be performed. An inadequate number of cases available from some school sites prevent this comparison on any question of this research effort. Beginning with Table 18, Appendix B contains all tables displaying demographic, numerical, and percentage data. Tables 33-39 relate to this specific research question.

After reviewing the percentages found in the tables in Appendix B, this researcher discovered no important insight for any of the statistically significant categories except for the comparison of remark and education (Table 38). The higher the educational attainment of the respondent, the higher the percentage of negative answers and the lower the percentage of positive answers.

Large differences were found in the answers from the 211 responses. Fourteen percent of the respondents indicated a belief that lesson planning was easier. Explanations supporting this belief include the notation of the fewer number of classes to prepare for and the longer planning periods. Some of these seemingly positive responses were also punctuated with negative rationales. Typical clarifications relate to fewer preparations making it easier, but determining how to get a year-long course into a

semester without burning out the students is more difficult. Another common theme found in the responses is that more teaching strategies are needed, for students' attention spans do not last for 90 minutes. Other respondents declared the advantage that using more hands-on takes the burden of planning off the teacher.

Twenty-eight percent of the responses came back with the word "same" marked. Sample explanations include remarks such as the same pie cut a different way, more preparation but fewer preparations, just using the same material, it's just a time difference, and "once you have your plan, you have it."

The remaining majority of answers, 58 percent, declared preparing lesson plans for block scheduling classes to be more difficult. Rationales were repeated throughout the responses and the following are a representative sample of the thoughts of teachers; deciding what to teach in less time for teaching, more things to plan for a longer period, trying to find things to keep them [students] busy or interested, need to find more creative uses of time, and planning all those activity changes.

Core teachers provided 17 positive responses with explanations. Eight of these rendered a variation of the theme that fewer preparations made lesson planning easier.

Three teachers indicated that the use of labs or hands-on took the burden of planning off the teacher. Two replied that new lesson plans were not needed for teaching with block scheduling.

Some positive responses seemed to have little actual relation to the question posed. Examples of these unexpected explanations are the ability to do a full lesson instead of a fragmented one, more enthusiasm from students, and easier to complete a lesson in class.

Seventy-nine core teachers rendered rationales for the greater difficulty of creating lesson plans. Of these, 36 (50%) declare the reason to be the longer time to plan for and the need for implementation of an increased number of activities in a class period, 15 (21%) cited the need to fill time and keep students busy, and 11 (15%) cited the difficulty in deciding what to teach and what to leave out of lessons.

Seven noncore teachers provided rationales for easier lesson plans. The only repeated explanation provided by these few respondents was fewer plans, and this reason was mentioned only twice.

Twenty-nine noncore teachers provided reasons for more difficulty in developing lesson plans. Thirteen (45%) cited more time and more activities to plan for, 5 (17%) mentioned

the need to keep students busy, and 3 (10%) mentioned the need to determine what to teach. All three of these were of the category of "other."

Questionnaire Item Ten

Question ten: Has teacher collegiality improved, declined, or remained about the same? Why?

Block scheduling advocates believe that the longer planning period will increase collegiality among teachers by giving them more time away from the rigors of the classroom to share personal information and ideas and experiences. This improved collegiality may promote greater instructional flexibility. The sharing that occurs during these longer planning sessions will provide ideas for strategies and techniques to be tried by the faculty members hearing them. This sharing will enlarge the knowledge base for a variety of teaching techniques available to each teacher. As teachers gain a broader knowledge of teaching strategies through the collegial process, these teachers will then become more flexible teachers better equipped to employ multiple techniques to teach a lesson or handle a particular classroom situation. This flexibility will ultimately produce better teaching and better learning in students.

Table 6 reveals the chi-squared analysis for questionnaire item 10:

TABLE 6

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 10

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	9.587	1	.002*
SUBJECT	54.402	8	.000*
EXPERIENCE	138.435	2	.000*
BLOCK	110	4	.000*
EDUCATION	133.377	3	.000*

p = .1

Tables 40-46 in Appendix B relate to this question. Again, every category subjected to analysis displays results of statistical significance. The significance of gender can be explained by the difference between the number of males and females responding to this question. Subject area significance (Table 42) is found with no positive responses for office technology and no negative responses for PE. Teachers with the least teaching experience produced the largest percentage of negative responses (25%), and those with the greatest teaching tenure provided the greatest percentage of neutral responses (64%). Teachers with either two or three years of teaching on block scheduling (Table 44) were most likely to produce a positive or negative response. First year and fourth and fifth year block teachers recorded high percentages of neutral responses.

Question 10 produced a large number of one word responses with no explanation, the response of "same." With this total of 95 uninformative responses, a grand total of 200 persons submitted an answer to this question. The resulting breakdown finds 64% of the answers being neutral, 19% positive, and 17% negative.

Reasons reported for negative responses include longer preparations leave no time to visit, more contact hours and less time in the hall, teachers are too busy to know what goes on outside their classroom, some faculty members see themselves as more important than others, never see each other, and teacher competition for students means that students go to the easier teacher and leave the experienced teacher frustrated.

The next largest group of answers (19%) declared that collegiality had improved. Representative rationales supporting this observation included the following variety of concepts: improved morale with less paper work, more professional consultation, needing each other to survive, fewer students at one time produces less stress, the schedule forces teacher cooperation, cooperation within the departments is more critical, there is more sharing of ideas, and "We are at an all-time high for we help each other any way we can."

The largest category of answers displayed neutral comments. Rationales included those of human nature such as: teachers will always disagree with each other, no more time and more kids a year, no common planning time, "we're a super faculty," people will be people, and "we're a seasoned faculty." Only 24 of the neutral responses were accompanied with a narrative. Eighteen (75%) of these indicated that block scheduling has no impact at all on teacher collegiality.

This researcher found no identifiable differences between opinions expressed by core and noncore teachers.

An Analysis of Research Question One

Block scheduling advocates declare that the longer class period will require teachers to adopt additional teaching practices such as cooperative learning, paideia seminars, problem solving, and technology use. Longer planning periods will provide time for increased teacher collegiality. This researcher sought evidence that the reform of block scheduling has allowed or contributed to the possibility for these environmental conditions to emerge.

The results of this research effort tend to reveal a response declaring that block scheduling advocates were advancing possibilities already extant. The abundance of answers to the question directly related to the issue of

teaching practices in the classroom that began with the word "more" paint a vivid portrait of teaching before the implementation of and with the block schedule. Teachers participating in this research effort report always having used a variety of instructional techniques and of still doing so. To these teachers no new teaching techniques are available for them to adopt for this different length of the class period. This fact is further highlighted by the respondent who reported, "No new techniques, but a greater use of labs and demonstrations and videos." Even more to the point were the multitude of one word responses, "none." Most teachers reported doing more of one strategy or less of another, adaptations these instructors considered appropriate for adapting to the longer classroom session. This reported data indicates that teachers already used the techniques block scheduling advocates suggested must be adopted.

New techniques mentioned under "Questionnaire Item Six" do not display "new" classroom teaching techniques. Strategies such as cooperative learning and hands-on activities were reported as being used with more frequency with block scheduling, but were neither new nor always reported to be implemented to enhance learning. Instead, these practices were cited frequently as being instituted to

fill time. Some responses noted that using group activities reduced paperwork. Many respondents indicated the use of a variety of activities but did not specify any activities as examples or indicate the purpose of their use.

However, the data gathered by this researcher may help dispel the myth that teachers are stuck in the lecture mode given the overwhelming number of participant responses declaring the use of more of some strategies and less of others. Not all topics can be taught through a lecture approach and teachers realize this. This researcher finds that teachers had previously used multiple teaching strategies. The report finding that 98% of teachers in North Carolina (Blocked, 1996) felt prepared to teach in block scheduling when they first entered the setting adds further validity to this conclusion.

Lesson planning, an indication of the complexity of the lesson to be presented, proves more difficult for these respondents. The advantage of a longer planning time seems often eroded by the longer time needed to plan. No thinking or reflecting time for teachers seems to accompany the longer planning period.

The ideal of improved collegiality proved unmet. Teachers indicated clearly that planning for longer classes proved more difficult and time consuming thereby reducing

time for collegiality. Fewer class changes mean that teachers see each other less during these unstructured moments. One might conclude that block scheduling produced a decline in collegiality. However, none of the answers provided by the respondents spoke to relationships taking place after school dismissal. Evidently teachers still gather in collegial groups at the end of a long day even though they have less time to do so during the day. This may explain why the majority of responses to the question regarding collegiality reported "same," or that the schedule did not affect collegiality at all. Block scheduling appears to have no effect on teacher interactions.

The Second Research Question

This researcher designed this question to reflect the learning of students in block scheduled schools when compared to teachers' perceptions of student learning with the traditional schedule. The second broad question reads as follows: Are students taught in a block scheduling environment provided access to more meaningful learning experiences than students who are taught in the traditional schedule? This broad question included five of the specific questions on the questionnaire. Three of these questions pertain directly to learning. Two relate to the supplemental learning experiences found in the school media centers.

Questionnaire Item 11

Question 11: Is more, less, or about the same subject matter covered during a semester? Why?

Table 7 shows the chi-square statistical results for questionnaire item 11.

TABLE 7

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 11

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	6.879	1	.009*
SUBJECT	62.980	8	.000*
EXPERIENCE	127.548	2	.000*
BLOCK	87.281	4	.000*
EDUCATION	174.342	3	.000*

p = .1

Statistical results indicated noticeable differences for all categories. Tables 47-53 in Appendix B pertain to this question. This researcher discerned nothing important in the gender percentages. Core academic classes (Table 49) show the highest percentage of negative responses at over 60%, with science an exception at 45%. However science, along with office technology and art, show no positive responses. PE has no negative responses. The category of "other" has a high level of negative responses (67%). Teachers in this category who identified themselves are

mostly special education and foreign language teachers. Teachers with more than five years of experience (Table 50) were more likely to submit negative responses, hardly issuing any positive remarks. The negative/positive ratios were 63%/6% for five years of experience and 60%/10% for 10-plus years of experience. The higher the level of attained education (Table 52), the lower the rate of positive responses, reaching a low of "0" with an Ed.S. degree.

Teachers on their first year with block scheduling had the highest rate of negative responses at 69%. This rate of negative responses from teachers fell in their second year of teaching in block scheduling to 47%. The rate of negative responses then rose again for the third year of teaching on block scheduling to 55% and again on the fourth year of teaching on block scheduling to 67%.

Core teachers responded with neutral rationales 19 times. Eight of these rationales indicated that the same state mandates existed, four indicated that students were learning the same but they were teaching less, and three said that block scheduling maintained the same time frame for teaching.

Ten core teachers indicated that students were learning more. Three of these positive responses indicated the reason to be more class time. Other responses were not so focused

on the question and include such sample responses as teachers are teaching it [the subject] in one semester instead of two (two responses), there is not as much stopping in class, and there is less wasted time.

Most core teacher answers were negative. Of the 87 rationales provided, 56 (64%) indicated the cause to be fewer instructional hours. Other frequently provided responses included covering less material (9%), students cannot pay attention that long (7%), classes move too fast (3%) and activities consume instructional time (3%). No other explanation appeared more than once.

Noncore teachers had a slightly different approach. Sixteen respondents provided rationales for a neutral response, but only two responses were repeated. The fact that clock time and state requirements are the same were each mentioned twice. Thirteen participants indicated a positive response. Of this number, four (31%) cited fewer interruptions and two (15%) cited longer classroom time. Twenty-three respondents indicated rationales for negative responses. Most frequently mentioned rationales for a belief that less subject matter is covered were the eight (35%) that indicated fewer instructional hours, four (17%) that cited attention span, and three (13%) that mention covering less material.

Questionnaire Item 12

Question 12: Is subject matter covered in more depth and breadth, about the same depth and breadth, or less depth and breadth with block scheduling? Why?

This question regarding subject matter coverage is comprised of two parts, the only question that takes this approach. This question does not represent good technique, but is so phrased because advocates of block scheduling theory combine these two concepts as if they were one in their arguments. The respondents, however, maintained the distinction with their answers by answering the question in two parts as if it were a two-part question.

Table 8 displays the chi-squared statistics for questionnaire item 12.

TABLE 8

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 12

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	6.75	1	.009*
SUBJECT	67.594	8	.000*
EXPERIENCE	134.094	2	.000*
BLOCK	79.063	4	.000*
EDUCATION	161.125	3	.000*

p = .1

All categories display statistical significance. Tables 54-60 in Appendix B pertain to this question. Males (Table 55) show a tendency to display a neutral response. The core academic subjects (Table 56) have the strongest negative responses with social studies (57%) and math (46%) leading the way. Art (56%) and PE (83%) have predominantly positive responses. Teachers with the least experience (Table 57) were the only group to record more positive than negative responses. All educational attainment categories (Table 59) except Ed.S. recorded more negative than positive responses.

Core academic teachers provided 58 negative responses to this questionnaire item. Of these responses, some of which mentioned more than one concern, 36 (75%) indicated fewer instructional hours as a causal factor for teaching with less depth and breadth. Eight (17%) each cited the faster pace of instruction and the diminished curriculum coverage as factors. Neutral responses fell primarily into the category of more depth and less breadth. This trade-off was cited by 10 of the 22 neutral explanations. Four of the 22 cited a variation of "sometimes yes and sometimes no." A few neutral responses left this researcher in a quandary regarding the meaning of the response. These include reducing material to the bare bones, teaching with less breadth, inability to focus on favorite topics, and lower

retention. Of the 23 positive responses, six (26%) indicated a longer class period and four (17%) indicated the opportunity for better discussions as rationales for covering subject matter in more depth and breadth. Some positive responses do not deal directly with this question. Among these are a faster time frame, more focus, more selective about what is taught, and more preparation time.

Noncore teachers provided rationales similar those elicited from core teachers'. "More depth and less breadth" was recited with six of the seven neutral responses. Positive responses from noncore teachers were more varied. Six of the 19 (32%) indicated the use of drill or application exercises in class as reasons for improved learning. Additional classroom time was the next most frequently mentioned with three (16%) responses. Negative responses from the noncore teachers closely resembled the perceptions of core teachers with lack of instructional time cited by eight of the 12 (67%) and pace of instruction with three of the 12 (25%) as the most frequently mentioned concerns.

Questionnaire Item 13

Question 13: Do you perceive that students are learning more, less, or about the same as they did under the traditional schedule? Why?

Table 9 displays the chi-squared statistics for questionnaire item 13.

TABLE 9

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 13

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	6.352	1	.012*
SUBJECT	56.154	8	.000*
EXPERIENCE	114.209	2	.000*
BLOCK	119	4	.000*
EDUCATION	155.143	3	.000*

p = .1

All categories displayed statistically significant results. Tables 61-67 in Appendix B pertain to this question. Gender shows no important percentage differences. Subject area (Table 63) does show differences. Math teachers (37%/22%) and social studies teachers (41%/30%) rendered more negative responses than positive ones. PE teachers had no negative responses and art teachers had only one. Teachers with the greatest teaching experience (Table 64) had the highest rate of negative responses and the lowest rate of positive responses (38%/34%). With the exception of year three, each year on block scheduling (Table 65) produced increasingly higher percentages of negative responses, a trend that reached to 50% negative and 13%

positive at year five. The group of teachers with an Ed.S. (Table 66), the smallest number in the sample, produced the highest percent of positive responses.

Sixteen core academic teachers provided neutral responses. The response repeated four times, the only one repeated, was that students who want to do well will do well. Other reasons for neutral responses include: the fun stuff is gone, people do not know how to use time, because of more work on social skills, 90 minutes is too long for keeping anyone's attention, same amount of time, students learn according to their genetic makeup, and less retention.

Forty-one responses from core teachers were positive. Eight of these (20%) cited fewer classes for students to study for at one time, five (12%) cited increased time per classroom period, and three cited each the use of activities and presence of improved grades as rationales for increased student learning. Other remarks for improved student learning included less material covered, students get compacted learning and have better memory, concentrated teaching (2 responses), students are expected to think and remember now, less time to forget (2 responses), and learning more but retaining less (2 responses).

Thirty-nine respondents related negative reasons. Twenty-two (56%) of these negative comments cited reduced

learning by students and the reality of reduced teaching time for rationales. The other two most mentioned categories were less subject matter coverage (16%) and attention span ends before the class does (13%).

Noncore teachers did not display a pattern with neutral responses for there were only four, two of these citing attention span. Twenty-nine responded with the rationales for improved learning. Eight of these (28%) cited the time to employ more application exercises and activities during the class period. The next largest category of answers was a longer class period with four responses. Other rationales include attention span can last a semester but not a year, learning more but forgetting easier, more time a year in class, and more concentrated teaching.

Only 13 noncore teachers responded negatively to this question, nine from the category of "other." There were five responses each for the reasons of less time in class or less instructional time and less subject matter coverage.

Questionnaire Item 14

Question 14: Are student projects more thorough, less thorough, or about the same as those submitted with the traditional schedule? Why?

Table 10 displays the chi-squared statistics for questionnaire item 14.

TABLE 10

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 14

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	5.842	1	.016*
SUBJECT	71.018	8	.000*
EXPERIENCE	103.018	2	.000*
BLOCK	100.618	4	.000*
EDUCATION	153.273	3	.000*

p = .1

Every category proved statistically significant with this question. Tables 68-74 in Appendix B pertain to this question. The gender percentages (Table 69) represent the sample consisting of many more females than males. Social studies (28%), language arts (21%), and "other" (27%) teachers (Table 70) had higher percentages of negative responses, while art (50%) and PE (67%) had the highest percentages of positive responses. As teaching experience (Table 71) and years of teaching on block scheduling (Table 72) increased, negative remarks tended to increased with a corresponding decline in positive remarks. Neutral responses increased with each year of block scheduling experience. Teachers with an Ed.S. (Table 73) had the highest percentage of both negative and positive responses at 25% and 50% respectively.

The results for this question are possibly hindered by the number of true responses acquired. Forty-seven core academic teachers indicated that they did not use projects as a teaching methodology. This repetition of statements from respondents did not indicate whether the lack of student projects had always been a condition of their teaching or began with the onset of block scheduling.

Twenty-four core teachers indicated a neutral response with an explanation. Fifteen (63%) of these stated some variation of "kids will be kids" to explain the lack of change. Fewer projects assigned provided the second most frequent rationale with three (13%) responses, and students must do projects on their own time with two (8%) responses. Six of the eight (75%) noncore teachers provided a single response identical to the primary response of core teachers; that is, they do not use projects.

Nineteen core academic teachers indicated that projects were now of lesser quality. Fifteen (79%) of these responses indicated a lack of time for students to complete projects. Five of the six negative responses (83%) from noncore teachers provided a like rationale.

Twenty-nine core teachers cited a belief that student projects had improved. Seventeen of those (59%) indicated that the longer class period provided time for teacher

clarifications and individual assistance. Seven of 14 (50%) noncore teachers cited the same reason. The second most frequent rationale with five responses (36%) was the fewer number of classes a student focused on. Other rationales provided by core academic teachers included fewer projects assigned, less homework assigned, students are more efficient, projects improved because portfolios are now assigned, students now know what to do with a project, and project quality is better but no time now spent on projects.

Questionnaire Item 15

Question 15: Do you give assignments that make greater use of, about the same use of, or less use of the library? Why?

Table 11 displays the chi-squared statistics for questionnaire item 15.

TABLE 11

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 15

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	12.902	1	.000
SUBJECT	75.049	8	.000
EXPERIENCE	86.354	2	.000
BLOCK	63.049	4	.000
EDUCATION	121.671	3	.000

p = .1

Every category of comparison proved statistically significant. Tables 75-81 in Appendix B pertain to this question. Males (Table 76) produced fewer positive responses and more neutral ones. PE, math, and vocations (Table 77) have the fewest negative responses with 5%, 8%, and 0% respectively. Social studies, language arts, and science teachers provided more negative responses than positive ones and as many neutral ones as the first two categories combined. Positive responses declined with each level of teaching experience (Table 78) but negative and neutral responses showed no pattern. Nothing significant can be identified by this researcher with the categories of teaching experience or levels of education.

This question, as with the previous one, rendered a large percentage of a variation of the response "do not use the library." Fifty-three of 133 (40%) core teachers and 20 of 49 (41%) noncore teachers submitted such responses. No indication was provided regarding the newness or continuation of this condition.

Fourteen core teachers provided neutral responses with rationales. Five of these indicated unwavering expectations that require library skills and four indicated that library use had been made an out-of-school activity. Other neutral responses include "same based upon empirical observations of

students" and same but less time on computers. Neutral responses from noncore teachers include noting that required research is not overtaxing, the library is only one resource, and only go for the internet.

Twenty-three core teachers provided rationales for using the library more frequently. Twelve (52%) of these cited an availability of a longer library period. Using computers and adding instructional variety gathered two votes each. Seven of the 13 (54%) responses from noncore teachers cited the longer class period and three mentioned diversity of instruction as reasons for greater library use.

Thirty-one core teachers mentioned using the library less frequently. Twenty-two (71%) of these cited a lack of time that could be taken away from instruction as the primary reason. Mentioned three times each were the responses of fewer projects assigned and inability to schedule time in the library. Noncore teachers were less likely to provide negative remarks concerning library usage. Five of the seven (71%) noncore teachers cited the lack of time available away from instruction, four of these five from the category of "other."

Analysis of Research Question Two

This is truly a broad research question for there exists no generalized understanding of or definition for

"more meaningful learning experiences." Proponents of block scheduling bemoan the fact that with the traditional school design, the curriculum and the schedule decided the teaching emphasis. Traditional curriculums do not teach to the interrelatedness of subject areas. Additional course offerings combined with the longer class periods will permit greater teaching flexibility, greater depth of teaching concepts instead of factual material, greater use of science labs for illustrating scientific principles, and more use of the library for more complete study of research topics. How might the implementation of block scheduling address these ideals?

In practice, block scheduling seems to have the opposite of its intended effect. The curriculum and the schedule are of greater concern, not less, to the teacher of core academic classes--math, science, social studies, and language arts. This is directly attributable to time, a primary reason mentioned throughout the negative responses. For the 4 X 4 system or semester system, the four plus weeks of instructional time lost from the traditional schedule forces teachers to eliminate the fun, the sidelights and anecdotes of the subject matter. The focus now for these teachers lies with the end-of-course tests, and little to no interest is expressed in considering teaching anything but

the subject matter prescribed by the state, in as much as student retention of this information represents teacher accountability. A combination of the tested curriculum and the schedule eliminating weeks of instruction seem to have tied the hands of teachers. Paraphrasing a response from the data, teaching only to the exam hampers creativity and student interest.

No respondent in this research effort mentioned the interconnectedness of subject matter. They did, however, mention more hands-on activities, more flexibility of teaching, and a greater depth of teaching. Unfortunately, no examples were provided from any participant to provide insight into the respondent perception of content for hands-on activities or meaning for flexibility of teaching. This researcher has no idea what these concepts mean to the respondents who reported these phenomena. On the other hand, most teachers did indicate that longer classes did permit greater depth of teaching for selected topics.

A surprising contradiction of the data collected surrounds teaching and learning. Surface findings are that teachers believe that they are covering less subject matter but students are learning about the same or more. A closer look at the rationales provided illustrates that an insurmountable mountain range of the definition of the term

"time" separates teachers into two groups with drastically different perspectives. This is one point of respondent conflict of interpretation that the simple scrutiny of the quantitative data would never have revealed.

Respondents who cite "more" learning or subject matter covered interpret the longer class period as being more time. Perceptions of these research participants revolved around the potential or actual events within that 90 minute classroom period. Respondents who cited "less" in their answers interpreted time in relation to the year and the overall number of instructional hours lost in the switch to block scheduling as well as the greater percentage of time lost due to missed days or interruptions.

Though personal perceptions create a personal reality, such perceptions do not necessarily represent true reality. Fewer instructional hours may very well lead to the result of, as several respondents so aptly phrased the concept, less teaching and less learning. This would be especially true if teachers are doing, as many declare to be doing, eliminating the interesting sidelights of the subject matter and sticking only to the curriculum guide components known to be tested. Early advocates of block scheduling advanced the premise that teaching less would actually result in greater student learning. Just stating the supposition does

not make it so, and this researcher found no information from either the literature review or the teacher responses supporting this presumption.

Student learning plays an important part in the block scheduling debate. Research conducted by Semb and Ellis (1994) and Gordon (1995) indicate that retention is a matter of memory and that memories need repetition and time to form. Learning is memory. Without the creation of memories, there is no learning. Several respondents made the point of noting that the speed at which the curriculum must now be taught does not allow retention, or this hardening of memories, to take place. Teacher concern regarding retention appears in the data for questions 11, 12, and 13. What one respondent termed "speed teaching" does not produce greater learning.

Student projects represent another form of learning activity. The majority of teachers responded with "same" regarding the quality and use of the library. Yet, these explanations were further punctuated by negative remarks citing the decreased use of projects and decreased overall library use as a teaching strategy due to the need for time in class to cover the required curricular material. A significant number of respondents also replied that they did not use the library at all nor assign projects. This

indicates that block scheduling has not encouraged library use. Some respondents made library assignments an outside of class activity rather than a teacher guided one. The common rationale behind these decisions was the lack of time, the very element that block scheduling was supposed to create.

Media center respondents declared that the library was being used more by teachers (page 151), but admitted that it may not be due to attendance by core academic teachers. Noncore teachers provided few negative remarks concerning library use. Teachers who did not traditionally make use of the library may make use of it now. Also, subjects that used to be half a credit became full credit courses with the implementation of block scheduling. Teachers of these courses have more time to use the library than previously available with the traditional schedule. If the perception of the librarian and the supposition of this researcher are true, the perception of greater library use is not at odds with the perception of core teachers.

The disparity between the perceptions of the teachers and the librarians may also be explained by numbers. With the traditional schedule, the library had at least six periods to fill. With the block schedule, the library has only four periods to fill. It is easier to appear full when only two-thirds of the slots now exist. It may be that the

library is used less but appears to be used as much or more. Some teachers did respond that scheduling library time proved more difficult with block scheduling.

One highly touted advantage of block scheduling lies with the subject of science. Advocates visualize science teachers in uniform appreciation for the added time to set up, complete, and take down an experiment and the learning possibilities such lab activities provide. Science teachers themselves did not report covering more subject matter. Not a single science teacher reported the perception that students learned more from instruction in block scheduling.

Are students being subjected to more meaningful learning experiences? The answer seems to be a negative one. With less subject matter covered, less breadth of learning, fewer projects, and less library time, students seem to be experiencing less meaning to their education. The emphasis with teachers lies with the concern about the shorter instructional year for students and teaching to the state mandated tests. Instruction provided with block scheduling appears to be more to the highly criticized "just the facts" than before, especially as this relates to core academic classes driven by state tests. Block scheduling has robbed students of the time to complete the extras in learning possible within the traditional, year-long schedule.

Research Question Three

This researcher's third research question directs attention to the types of influences block scheduling may have on students. Block scheduling advocates have advanced the cause of this particular school organizational design as an agent for improving a student's school life and experiences along with improving academic success. Specifically, the question reads, "Is the school-wide change to block scheduling beneficial for all students?" This researcher assigned three specific questionnaire items to the broad research question. The purpose of these questionnaire items is to gather data to evaluate the degree to which these goals of block scheduling have been or are being met. From the information volunteered by the participants, an interpretation of the influences of block scheduling on student behavior and performance in school can be derived.

Questionnaire Item Seven

Question Seven: With block scheduling, have student grades risen, fallen, or remained the same? Why?

Table 12 displays the chi-squared statistics for questionnaire item 7.

TABLE 12

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 7

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	6.841	1	.011*
SUBJECT	55.463	8	.000*
EXPERIENCE	131.379	2	.000*
BLOCK	80.379	4	.000*
EDUCATION	159.241	3	.000*

p = .1

All categories compared proved statistically significant. Tables 19-25 found in Appendix B pertain to this question. The percentage of males (Table 20) with negative comments (22%) is twice the female rate (11%). Females rendered a higher rate of positive responses (45%) than males (29%). Math teachers (Table 21) had the highest rate of negative responses (34%), a rate over twice the average of 15%. Teachers in physical education had the highest rate of positive responses (67%), with teachers in vocations and social studies following with 45%. Positive responses declined and neutral responses increased with rising levels of teaching experience (Table 22). First year block scheduling teachers (Table 23) produced 7% negative responses but jumped to 21% the second year and stayed in that vicinity. No pattern is shown for levels of education.

Twenty-five core teachers responded that grades have remained about the same. The most dominant reason cited is that the students have not changed. This rationale was provided nine times (36%). The second most frequently mentioned response, that teachers use the same outline and curriculum, was cited six times (24%). Other rationales include same but they [students] retain less, same person in charge, and same but they [students] do not have time to think things through. Noncore teachers cited same students four of 12 times (33%). Additional reasons from noncore teachers include same teacher, better student concentration with fewer classes, quantity sacrificed for quality, and teachers test what is taught.

Core teachers responded 17 times with negative responses. The most common responses were intense work with five (29%) responses, lower students' grades have fallen with six (35%) responses, and lag time for sequential courses with three responses. Three of the responses from noncore teachers cited an inability to see the students every day, citations from schools with an A/B schedule.

The biggest response came from teachers reporting rising grades. Core teachers provided rationales 47 times. The bulk of these rationales can be divided into three categories. More time in class to complete assignments was

repeated most frequently with 16 responses (34%). Fewer subjects at one time for a student to study for came in second with 14 responses (30%). Increased individual help came in third with 9 responses (10%). Other positive remarks from core teachers include EOC tests only cover a semester's worth of material, standards lowered (two times), less homework, better short term memory, if a student is failing he drops the course and returns another time, and there are fewer F's issued.

Noncore teachers produced similar findings to those revealed by core academic teachers. They reported that grades are rising due to more time in class and fewer subjects for which to study. Both of these explanations received eight of the 24 rendered responses (33% each). Other reasons cited for rising grades include students do not get tired of the subject, no reason not to finish assignment, and activities and hands-on in class promote learning.

Questionnaire Item Eight

Question 8: With block scheduling, has student classroom behavior improved, remained the same, or worsened? Why?

Table 13 displays the chi-squared statistics for questionnaire item 8.

TABLE 13

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM 8

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	4.715	1	.029*
SUBJECT	52.576	8	.000*
EXPERIENCE	109.322	2	.002*
BLOCK	111.266	4	.000*
EDUCATION	135.748	3	.000*

p = .1

All categories compared proved statistically significant. Tables 26-32 in Appendix B pertain to this question. No important differences are found in the gender remarks. Art (Table 28) and "other" teachers (38% and 40%) rate far above the negative average of 29%. Office technology produced no positive responses. Teaching experience (Table 29) appears to play no role in the responses. Years of teaching on block scheduling (Table 30) has a fourth year quirk, a jump in negative responses from the average of 29% to 55%. Teachers with an Ed.S. degree (Table 31) produced no negative responses.

Reasons explaining neutral responses fell into three categories as provided by core teachers. Of the 20 responses providing rationales, 11 (55%) reasons indicated that expectations were the same and five indicated that behavior

had nothing to do with the schedule. The few responses left include boredom and restlessness cited by five respondents. Of the 11 noncore respondents, forthcoming rationales included same expectations appearing three times, same students appearing twice, and students get "antsy" toward the end of class three times.

Twenty-four respondents provided rationales for improved behavior. Getting to know the students better and more involved students received five votes each, less school stress received four votes, less time in the hall acquired three, and only a semester relationship received two. Other rationales for improved classroom behavior include lower numbers, starts out well but kids burned out by May, so much going on a student has to pay attention, students now see the need to participate, improved because the same teachers who had trouble on the six period day have trouble on the block, and students are allowed to get up and move around more.

Noncore teachers cited students becoming more involved in class with four of nine responses with less stress accounting for two more. Other reasons include seeing each other less and students have become more serious.

More teachers indicated poorer behavior. Thirty-two core teachers provided insight. Answers basically fell into

two categories with student exhaustion and expired attention spans mentioned 14 times (44%) and students being in one class too long mentioned 13 (41%) times. Of the 14 responses from noncore teachers, three (21%) indicated attention problems with the a longer class and six (43%) said students just had to stay in one place too long. Other reasons included due to the mix of students assigned to class and overcrowding.

Questionnaire Item 16

Question 16: Has the quality of interschool competitions improved, remained the same, or declined? Why?

This question is the other questionnaire item for which negative, positive, and neutral ratings were assigned to remarks but a statistical analysis was not performed. The responses rendered by the research participants did not warrant an analysis for the explanations presented a clear and almost single voice. Unfortunately, this question was not understood by a majority of the respondents. Many respondents left the question blank. Of the 138 responses, 84 were simple responses with no explanation, often underlined in the question. "Don't know" describes 19 of the responses and "same" came from 56 of the respondents. A few neutral responses did have explanations. Some provided answers like the following: "School lets out at three and

the practice schedule is still the same"; "What is it? I guess we don't have any"; "Improved, better intramurals."

A number of the neutral responses declared that block scheduling does not affect interschool competitions. A couple of responses were more directed to the question. These include noting that the schools with which competition takes place are also on block scheduling and teachers continue to support competitions and work with students.

There were a few "improved" responses, eight in all. Reasons given included more honors students have time for academic competitions, more students have time for extracurricular activities, "We just use the kids who really want to participate," "You know your students better and get more loyalty from them," and more classes means more eligibility.

The 138 respondents produced a mere 34 explanations with rationales directly addressing the question of interschool competitions. Of this small number, five were neutral (15%), six were positive (18%), and 23 were negative (68%). These negative rationales include the following: "We don't have students long enough to really know who to take to competitions"; when not in class, interest fades; "We don't have time for competitions anymore"; "Club enrollment decreased. Students not interested in competitions when not

enrolled in class"; "You don't see the student during the semester of competition"; not much time for practice, less time with the student, less time to prepare with students available only one semester, difficult to have a consistent team, and students can't afford to miss class. The message established by this abundance of negative responses reveals that block scheduling does not promote interschool competitions.

Analysis of Research Question Three

Advocates of block scheduling supply ample reasons for why the scheduling system should benefit students. By concentrating on fewer classes at one time, students will learn more. These advocates also believe that there will be fewer discipline problems with fewer class changes. These are laudable goals, but can a mere change in the school schedule effect the emergence of these ideals within a school?

Claims that block scheduling reduces the number of discipline problems proved situationally true and untrue. Some teacher respondents and guidance counselors (page 146) acknowledged the reduced number of discipline referrals due to confrontations that took place during class changes. However, teachers often noted increased discipline problems arising in the classroom from the longer period and from

larger classes. There is no indication regarding an accompanying increased number of classroom discipline referrals or lack of such an increase. The respondents indicate only an increase in restlessness, apathy, and inattentiveness exhibited by students as the class period progresses. In fact, those respondents who explained the worse behavior placed a heavy emphasis on the attention span of students.

It is this lack of a longer attention span that leads directly into the question of increased student learning. Does teaching within block scheduling contribute to greater student learning? The answer again appears not to be one that would be favored by the advocates of the reform. Chapter 2 revealed that though grades rose, no standardized measure of student achievement showed improvement. In fact, they tended to display declining results as shown in the works of Carpenter (1997), Raphael (1986a & 1986b), and the publication cited in the reference as AP (1996) from the Education Testing Service. Students are taking more courses. Yet, there is no indication that these electives increase learning. Electives, after all, are not sequential to any required courses and not related to any other courses a student takes. Electives appear in isolation within the curriculum. Learning in this environment is not conducive to

greater or more complex student learning or student retention of subject matter content found in electives.

Finally, evidence indicates that block scheduling has brought about or is leading to a decline in student participation in clubs and interschool competitions. These are organizations and activities that promote hands-on learning and individual attention that advance greater student understanding and application of content learned,, drill and practice that form memory and contribute to retention of learned content, teamwork, and social skills. These are goals of the advocates of block scheduling but implementation of the scheduling design itself tends to diminish student participation in these activities. Block scheduling seems to be inhibiting the very goals it is designed to advance.

The Open-Ended Questions

All of the items heretofore reported upon have had a specific focus. Three of the items were open-ended. The respondents could provide any answer(s) they wished.

Questionnaire Item 17

Question 17: What aspects of block scheduling do you appreciate most? Why?

This question asked respondents to provide only perceived positive aspects of block scheduling. Because

these remarks were by design to be positive in nature, a value was not assigned to them and , therefore, data from this question were not subjected to statistical analysis. The quantitative findings for this question presented by this researcher represent the old-fashioned hand counting of every type of response as the method of determining frequency.

A few respondents failed to identify any aspects of block scheduling worthy of their appreciation and simply stated "none." This negative response appeared on eight of the 255 responses. Other respondents took advantage of the opportunity to list several aspects of this school reform that they greatly appreciated, sometimes many aspects as wording of the question does indicate acceptability of a response that contained multiple aspects. An array of aspects was submitted by the volunteers in their narrative responses as traits of block scheduling worthy of appreciation. This researcher displays the most frequently mentioned of these aspects to appreciate in Table 14. Percents indicate the percentage of teachers selecting that particular aspect of block scheduling to appreciate. All percents are rounded to the nearest whole number and are based upon a total of 174 core teachers and 81 noncore teachers.

TABLE 14

ITEMS TEACHERS APPRECIATE ABOUT BLOCK SCHEDULING

	Number of Core Teachers	Percent of Core Teachers	Number of Noncore Teachers	Percent of Noncore Teachers
Giving students more electives	8	5	2	2
Giving individual attention	4	2	2	2
Getting to know students	6	3	4	5
More labs	12	7	4	5
More classroom activities	4	2	3	4
Less paperwork	15	8	7	9
Fewer classes to teach	34	20	13	16
Changing students mid-year	20	11	14	17
Fewer students at a time	30	17	10	12
Longer planning	63	36	9	11

An interesting result arising from this questionnaire involved the responses from science teachers. Forty science teachers responded to this questionnaire item. Twenty-one indicated longer planning as a noteworthy plus. The ability to conduct better labs represents the fourth highest frequency of aspects to appreciate and was mentioned 11 times.

Table 14 is generally self-explanatory. The items of appreciation showing double digit percentages of teachers are those that permit less work. Longer planning periods, fewer students at one time, fewer classes to teach at one time, less paperwork, and getting rid of problem students at mid year are aspects of teaching that require less work for the teacher. These cannot be said to directly improve teaching and learning as they are presented by the respondents. Surprisingly, noncore teachers report appreciating changing students at mid-year at a somewhat higher rate than core teachers. Noncore teachers place less emphasis on the longer planning period than do core teachers.

Questionnaire Item 18

Question 18: What aspects of block scheduling do you find most troublesome? Why?

This question by design produced only negative responses and was not subjected to statistical analysis. Teachers did find numerous aspects of working with block scheduling troubling, but not all of them. A few teachers replied "nothing" or "None, I love it." Most did cite items of concern revealing a host of topics they deemed worthy of more attention. This researcher divided the most common responses as reported by core and noncore teachers. These

are shown in Table 15. Percents are rounded and based upon 150 core and 81 noncore teacher responses.

TABLE 15

TROUBLESOME ASPECTS OF BLOCK SCHEDULING

	Number of Core	Percent of Core	Number of Noncore	Percent of Noncore
Not good for lower level and labeled students	7	5	1	1
Scheduling conflicts	3	2	3	4
Poorer class behavior	7	5	0	0
Leaving out enrichment	9	6	1	1
Not getting to know students	6	4	1	1
No time for drill	6	4	5	6
Lag time from Course I to II	8	5	4	5
Information retention	12	8	3	4
Absences and interruptions	12	8	7	9
Too much pressure for EOC	8	5	0	0
Attention span	19	13	11	14
Fewer instructional hours	32	21	4	5
AP is not on the block	3	2	1	1
Decline in clubs and vocations	0	0	5	6

The numbers presented in Table 15 present a clear picture of the array of concerns about block scheduling

troubling these respondents. This researcher has drawn some conclusions based upon the reading of the replies and the quantitative data displayed in the chart. Core teachers seem more concerned with effects of block scheduling on average and below average students, pressure of state tests and reduced instructional time, and a lack of time for enrichment activities due to fewer instructional hours. Noncore teachers expressed lesser concern than core teachers with classroom behavior but indicated much more concern with issues surrounding clubs and vocations. Other than these few noted differences of emphasis, core and noncore teachers indicated similar concerns.

Questionnaire Item "Comments"

This particular questionnaire item stood alone at the end of the survey instrument as a one word invitation to each voluntary participant. This concise invitation did not provide any direction for these participants to follow. Narrative comments provided by the respondents could be either positive, negative, or neutral. Therefore, the information provided for this questionnaire item could be coded and subjected to statistical analysis in the same manner as most of the previous questions.

Table 16 displays the chi-squared statistics for questionnaire item "Comments."

TABLE 16

CHI-SQUARED RESULTS AND SIGNIFICANCE LEVELS FOR QUESTIONNAIRE ITEM "COMMENTS"

	CHI STATISTIC	DF	ASSYMP. SIGN
GENDER	5.568	1	.018*
SUBJECT	17.832	8	.023*
EXPERIENCE	54.905	2	.000*
BLOCK	41.737	4	.000*
EDUCATION	41.8	3	.000*

p = .1

All categories displayed statistically significant results. Tables 85-91 in Appendix B pertain to this questionnaire item. Those for gender show only a difference in numbers, with more females than males reporting. Neutral responses for subject area (Table 87) were the lowest in the survey at 7%. Social studies, art, and PE recording none. The highest positive remarks came from vocational, art, and PE teachers with 50% each. Positive ratings above 40% came from noncore teachers. All negative ratings are 50% or above with the highest negative rates coming from social studies (75%), language arts (74%), math (64%), and "other" (64%) teachers. These negative ratings are basically from core teachers. The rate of negative responses increased with teaching experience (Table 88) and with experience teaching with block scheduling (Table 89)from 56% to 63% and 27% to

100% respectively. With each increase in educational level (Table 90) came a corresponding increase in positive remarks rising from 35% to 50%.

Respondents took the opportunity to produce some interesting comments that provide suggestions and insights into both the good and the bad consequences of implementing this innovative scheduling design. Only 32% of the 95 analyzed comments were positive and provided perceptions that block scheduling advocates would find predictable. A few of these comments are in the following list:

> It is great. There's an enthusiasm that I have not experienced before at this school.
> Variety is the spice of life. Teachers and students are different from semester to semester
> Less expensive for teachers to schedule doctor or dentist appointments
> I love the flexibility for activities and quick field trips
> I would not be teaching now if it were not for block scheduling. The 7 period day was killing me
> We were all apprehensive about the change to the block schedule. However, now that it has been accomplished, you do not hear the negative ideas from the faculty. It does work well for the student, giving them more opportunities to take different classes. It also works well for the teacher--fewer classes per day, more free time for planning, fewer grades to complete each grading period, fewer papers to grade, more time with each class to better accomplish the material being studied, new faces each term
> The advantages outweigh the disadvantages. I would not want to go back to 6 periods
> Theater is perfect for block scheduling

The majority of the comments volunteered by the research participants proved to be negative. This proved true at a rate of 61% for the 95 responses analyzed. Some of the most intense narratives found anywhere in the survey returned occurred in response to this item. Several of these narrative responses provided insights into block scheduling that had not appeared before in this research effort or the literature review and may add further topics of discussion to the block scheduling debate. The following list represents concerns that, for the most part, have not been reported in responses found in analyses of earlier questions:

> Why are we trying to impose a college schedule on high school students? Schools are supposed to change to help the students. Block scheduling only helps the highly motivated students and not the majority of students. We need to go back to the six period day.
> Discussions get lengthy and cause you to get behind
> The opportunity to take more electives is cancelled by the reduced class time to teach those electives properly
> I do not like block scheduling. It does not permit either depth or breadth of learning possible in the traditional schedule. I do not have time to do the creative things to keep class and learning interesting.
> Block scheduling is the worst idea to come to schools since the "open classroom."
> Poorer students get lost and can't keep up the pace
> Why do we keep going back to the 1960s to resurrect things that didn't work then. This is a gimmick that others have shown only works for a short time.

Personally, I have never had it easier, however, I feel the intellectual development of students has been deteriorating under the block schedule.

Not being able to reinforce concepts is an injustice to the student

Need more homework to accommodate shorter year, but students still have the same amount of time after school and can't do more homework. Most teachers do not want to go back to the old schedule because they like the extra time block scheduling gives them, not because they are convinced block scheduling is helping the students.

There is less time for a failing student to improve his grade, difficult for transfer students to catch up with material or even match courses. Shorter year means less remediation. Pace is so fast there is not enough digestion time before we move.

Students are not getting a good background and this will show up eventually.

Students are supposed to take a wider variety of subjects but we just have more prerequisites for the same courses.

I love it, but I don't feel it is best for the student in my subject area (math)

Overall, I like block scheduling. However, I teach lower level kids. They have problems when they don't meet on a daily basis.

Cooperative learning looks good on paper, but I find it not a valuable teaching tool.

Managing instruction for homebound and ISS more difficult

Scheduling conflicts keep some great students from taking second level courses in my area (vocations)

It is the worst thing we have ever done for students. Advanced classes get more time to make up for lost time. Fewer classes at one time exacerbates scheduling conflicts, especially in higher grades. More teachers planning each period means a heavier load for the remaining teachers. There is less total time and fewer skills taught. Advantages are for teachers, not students. The disadvantages are for the student.

> I prefer the six period day. I got more accomplished and my students seemed to do better. I'm ready to go back.
> Most teachers don't want to go back to the old schedule because of the extra time block scheduling gives them, not because they are convinced block scheduling is helping students.
> Students need more homework to accommodate the shorter year, but students still have the same amount of time after school and can't do more homework.

Three remarks came from teachers with perspectives not forthcoming from any of the other respondents. These three teachers taught in a block scheduling design allowing them to simultaneously teach classes on the block as a semester course and with a traditional time schedule as a year long course. This peculiar situation allows a firsthand account of teaching on block scheduling and on the traditional schedule without having to rely on memory. Here are those three responses:

> I taught the block every other day and a short class every day. The short block [shorter time meeting every day] learned more, had more labs, more videos, more enrichment activities. Even adults in a meeting do not listen after 60 minutes. Why think less mature people can effectively use 100 minutes of heavy material.
> The one class that meets every day in our schedule is always much farther ahead and students know more in the end (from a teacher with five years on the block)
> I get farther and into more depth in my everyday regular length class

Analysis of the Open-Ended Questions

The introduction of these three opportunities for an unguided response was an afterthought by this researcher. These three questionnaire items do not tie directly to any of the three broad research questions. This researcher did not anticipate that these three questionnaire items attached to the conclusion of the research instrument would stimulate the greatest responses from the research participants. Longer and more explicit narratives arose from the participants in response to these three nondirectional questions than with any of the other questionnaire items. The surprise expressed by this researcher is genuine. Having the insight and emotions pouring forth from these questions made this researcher delighted that this afterthought was incorporated into the study.

Little difference appeared with the appreciated aspects of block scheduling between core and noncore teachers. Teachers enjoyed most the aspects of block scheduling that made their days easier, less complex, and resulted in less direct effort on their part. These are natural concerns and not surprising to this researcher. This researcher had hoped that some benefits for teaching and learning would have been more prominent in the aspects of block scheduling appreciated.

The aspects of block scheduling teachers found most troublesome were also similar when core and noncore teachers were compared. Both groups of teachers shared a concern for the perceived adverse affects of block scheduling on teaching and learning. Noncore teachers do have a greater variety of concerns, as displayed by the smaller percentages. Core teachers have a dominant interest in student learning and believe that block scheduling does not advance the goal of greater student learning. The interpretation of time is hardly mentioned directly, but is inherent in the understanding of all the core teachers' aspects of block scheduling found troublesome.

The "Comments" section did produce some huge differences in the nature of teacher concerns. Noncore teachers had only one common concern, the adverse effect of block scheduling on average and below students. Aspects adversely affecting students were mentioned 4.5 times more frequently than the next highest frequency of comments, those of preferring to return to the six period day.

Core teachers had several concerns. Primary ones included fewer instructional hours, declining grasp of fundamental subject matter concepts by students, and the same concern for other aspects of school life and students as noted by noncore teachers. Examples of this concern

include transfer, absence, and ISS issues. The second most frequently mentioned issues included teaching more students a year, teaching more classes a year, and the loss of creative teaching due to the restricted time. Four respondents indicated the desire to return to the six period day.

These open-ended questions reinforced the trends established by the responses noted in earlier questions. Core teachers are more concerned with instructional time, or rather the lack of it. One respondent wrote that the advantages are with the teacher and the disadvantages with the student. These open ended questions seem to support that assumption. Teachers like longer planning periods and fewer students at a time, personal concerns. On the other hand, teachers expressed what this researcher interpreted as genuine concern regarding the multitude of perceived unhealthy effects on student learning resulting from perceived problems with teaching brought about by the implementation of block scheduling.

Reports from Faculty Outside the Classroom

This researcher wished to evaluate the perceptions provided by other members of the faculty who worked directly with students. The purpose of this evaluation was to compare their insights with those of teachers. Band, media, and

guidance personnel were selected. Several volunteered to participate.

Responses from Guidance Counselors

Statistical analysis was not performed on data gathered from guidance counselors, for the samples were too small to provide statistical analysis even with chi-square analysis. As with teachers, not all respondents answered all questions.

> Question Five: Are there differences with the academic guidance necessary with block scheduling from that seen with the traditional schedule? Why?

This question did not request a negative response but it received a unanimous one. Responses to question five related often to scheduling. Scheduling twice a year is more complex. The doubling of new beginnings reduces the time to talk with students. There is difficulty in scheduling failed courses and courses in sequence. Finally, there is no common course, like English once was, to find or meet all students.

> Question Six: Are there differences in the problems regarding behavior with block scheduling than were found with the traditional schedule? Why?

Guidance counselors noted problems with student attention span during the longer class sessions in their

responses to question six. They also noted fewer personal problems and confrontations of a personal nature due to the reduced number of class changes. The final notation concerned the problems students have with academic performance after only a few missed class sessions. Guidance counselors noted the ease and quickness with which students can fall behind in their class work.

Question Seven: Are you perceiving a difference in a student's ability to function academically in the classroom with block scheduling? Why?

Question seven found focus on the student in the classroom. Guidance counselors report that grades have risen because students are focused on only four subjects and teachers are teaching more indepth. This question elicited no variety of response.

Question Eight: Are you perceiving a difference in a student's ability to behave in a classroom with block scheduling? Why?

Responses to question eight were split between the inability of a student to stay attentive or on-task and no apparent change. Guidance counselors noted, as did teachers, the attention span problems students exhibited in classes of such a duration.

Question Nine: What aspects of block scheduling do you appreciate most? Why?

The aspects of block scheduling that guidance counselors appreciate most are similar to those of the teachers and include a variety of thoughts. These include only four progress reports instead of six or seven, less student time between classes, students and teachers getting a fresh start in mid-year, students have more choices for enrichment before graduation, with fewer subjects and teachers at one time the student is more organized, students have fewer books to keep up with, and there are more students on the honor roll.

Question Ten: What aspects of block scheduling do you find most troublesome? Why?

Question 10 asked for dislikes about block scheduling. This list was lengthy and displays as wide a variety of thoughts found with responses to the previous question:

Problems keeping students in school their senior year

No year long relationships between teacher and student intensifies need for advisor/advisee relationships, year-long AP courses take kids out of arts and vocations, different schedules for different schools or semesters ending after Christmas.

Not being able to recycle a student who fails a course

Trouble making up work after absence, easy to get behind, scheduling conflicts

Transferring students from school with other schedules and a loss of credits

Not conducive to math and foreign languages, gaps between courses, teaching too fast

Inability to see all students in a semester
More difficult to keep up with students, check schedules, check grades, handle classroom attendance problems for we start all over again in mid-year without ever finishing the duties of the first year.

Responses from Music Departments

This group of responses was not analyzed statistically due to the small number of responses. As with the other questionnaires, not all respondents answered all questions or provided an explanation for a response.

Question five: With block scheduling, is student participation in band or chorus greater, less, or equal to that observed with the traditional schedule? Why?

Responses to question five were generally negative. Music department personnel reported that AP classes take band members, especially in grades 11 and 12. Students need other classes and electives and can't schedule band. Younger students tend to avoid commitments to the years it takes to build a successful music program.

Question six: With block scheduling, are the performances given by the band or chorus of better quality, lower quality, or about the same quality as those performed with the traditional schedule?

Responses to question six fell evenly into each of the three categories of response, positive, negative, and neutral. Block schedule experience of the respondent played

an important role in the way this question was answered. Half of the positive remarks indicating improved quality in concert performances came from music instructors with block experience of fewer than three years. All the negative remarks citing declining musical quality in performances came from music instructors with block experience of three years or more. Noncommittal responses were sprinkled among all levels of block experience.

Question seven: Do you perceive that your instruction is enhanced under block scheduling? Why?

There were equal numbers of positive and negative responses to this question. Positive rationales included more time for rehearsal and teaching and students are still signing up for both semesters. Negative remarks included a lack of student continuity by students not continuing in band in successive semesters, students are burned out by lecture before arriving in music class, class is too long to maintain interest and attention, and block scheduling does not allow semester musicians same time to develop that the year-long class provides.

Question eight: What aspects of block scheduling do you appreciate most? Why?

Music instructors found several aspects of block scheduling to appreciate. Some include not having to hurry

set-ups and warm-ups, fewer discipline problems and time to cover course objectives, longer rehearsal times, and students can sample more areas of music which enhances their career preparation.

Music instructors also found aspects of block scheduling to their liking similar to those found by other teachers. These include fewer students, fewer grades to issue, and fewer preparations. One even stated that she enjoyed not having the same group of students all year.

Question nine: What aspects of block scheduling do you find most troublesome? Why?

Music teachers found many items they did not appreciate about block scheduling. A few of these are: musical growth is long term and needs daily rehearsals, the loss of juniors and seniors as a result of scheduling conflicts, daily rehearsals for 180 days is better than 90 on and 90 off, students can't play for 90 minutes, not seeing them for two days or more, continuity is lost as some students are lost and others gained each semester causing the competitive edge to decline, wasted time giving students breaks, and a lack of teacher input into what constitutes effective teaching and learning. One comment declared block scheduling to be a nightmare for the performing arts. The focus of these respondent comments lies with the perception of time, a value discussed on pages 116-7 and again in Chapter 5.

Responses from Media Personnel

This researcher did not submit this group of responses to statistical analysis due to the small number of returned questionnaires.

> Question five: Are there differences in the manner in which the media center is used with block scheduling compared to the manner it was used with the traditional schedule? How do you explain these perceived differences or absence of differences?

The answers for question five were generally positive. Media personnel routinely reported that the library was used by teachers for research with the block scheduling design. The common rationale for this perception pointed to the longer library period which allowed completion of a research project. One librarian differed with this view by stating that many teachers never assign research or use the media center because they feel pressured to cover the curriculum material to be "tested."

> Question six: Do you perceive the media center being used more or less frequently with block scheduling? Why?

Question six responses were equally divided between noncommittal and positive. The additional time in a library period to complete a project was duly noted as a plus for students. One librarian noted reduced use of the library by core academic teachers but increased use by other teachers.

One noted increased use by classes and declining in use for pleasure reading due to the schedule and no study halls.

Question seven: What aspects of block scheduling do you appreciate most? Why?

Librarians reported appreciating many of the same aspects of block scheduling that teachers reported appreciating. These similar aspects include longer planning periods, fewer class changes, less noise in the hall, a longer block of time permitting completion of research efforts in one library visit, closure each semester, a quieter setting allowing more time to accomplish tasks and do filing, and there can be more flexible scheduling with the faculty.

Question eight: What aspects of block scheduling do you find most troublesome? Why?

Question eight generated two types of responses. The first type did not directly concern the library and noted the same concerns generated by teachers. These include reduced time for teachers to cover the material, the adverse impact on academics produced by absences by a student, and student transfer issues. One librarian complained that some teachers have not begun to vary their methods of teaching.

Other responses pertained to the library itself. Media personnel bemoaned the fact that less class time means fewer books are checked out and fewer books are assigned to

students, English had to drop favorite novels from the curriculum, the span of time between library orientation and actual use of the library causes the need for review and many students find this boring, and students do not have independent time to visit the media centers. One librarian made the observation that teachers schedule projects taking only a partial period but allow their class to remain in the media center the entire period and goof off.

Analysis of Reports from Faculty Outside the Classroom

These volunteer research participants reiterated many of the aspects of block scheduling that were mentioned by teachers in their responses. Both guidance personnel and band instructors mentioned scheduling conflicts as a prime consideration. Both also appreciate the reduced paperwork. For band instructors, this arose from having fewer classes at one time. For guidance personnel, this delight is based upon fewer number of progress reports needed for targeted students due to fewer classes to monitor.

Guidance counselors mentioned some aspects of block scheduling that are also concerns of teachers. These include attention span of students, inability of students to repeat failed courses the next semester, the pace of instruction, and the inability of teachers and students to form classroom bonds.

Band instructors spoke of the lack of student continuity in the program and its affects on competitions. This is the same concern spoken of by vocational teachers and some academic teachers.

Media personnel noted a greater amount of student research due to the longer class period. This represents an echo from many teachers who cited the same perspective. Media personnel also noted the problems of student transfers noted by some teachers and guidance counselors. Another item mentioned by media personnel related to the declining use of enrichment activities by teachers, an often repeated concern teachers mentioned in their responses, and the accompanying adverse effect on student use of the library.

Additional Elements of Block Scheduling

As stated in Chapter 3, qualitative inquiry is not specific in advance of research and that topics arise from the observations. This research effort revealed other aspects of block scheduling that were unanticipated and, therefore, not included in the research questions as defined in Chapter 1. Consequently, these topics did not have specific questions designed for them. These aspects of block scheduling are not covered in Chapter 2. This researcher believes that these aspects of block scheduling need discussing in order to present a more complete picture of

the practice. There very existence represents cause for consideration by anyone giving thought to adopting block scheduling for a school.

Students

A primary issue regarding students is the transfer of credits and enrollment when a student moves from a school with block scheduling to a school without it or vice versa. There exists no mechanism by which that student can gain or even maintain credit equity in such a transfer. When transferring from a six period school to a four period one, the student loses at least two credits that cannot transfer. When transferring from a four period school to a six period one, the student loses two credits, for he was only taking four or fewer at the previous school. Students may transfer into courses but may not enroll into the middle of a course in progress to gain credits five and six being earned by other students at that new school.

Many respondents mentioned that absences hurt a student in the block schedule more so than an absence in the traditional schedule. There are many legitimate reasons for a student to be absent from class. Field trips cannot be completed in 90 minutes unless they are of exceptionally close proximity to the school. Interschool competitions, including academic and vocational competitions, remove

students from classes. Guidance counselors can no longer target an English class to reach all students, yet they still have the need to call some students out of class. Illness, injury, and misbehavior are all part of the natural school environment. Not only does the student lose proportionally more instructional time from an absence incurred in block scheduling, but ISS programs and home-bound schooling are more difficult to implement and oversee because the fast pace of instruction causes difficulty for faculty offering assistance for students who will return to class.

Inclusion of special students into regular classrooms was found to be an issue. Special students have, by definition, individualized plans that are to be followed. Individualization allows the teacher the flexibility to change a student's activities as often as needed to keep that student's attention and prevent frustrations. Regular classrooms have a single classroom topic which is in place for the duration of the class period. Both teachers and guidance counselors spoke to the problem of the block schedule for these special types of students. Many respondents noted that the 90-minute period on a single topic is too long for LD or ADHD student to endure whereas a 50-minute class may not be. This researcher recognizes that

several respondents claimed the ability to, and appreciated the opportunity to, provide more one-on-one attention. This attention remains focused on the class activity or topic of the day. Individual attention is not the same as individualized attention provided with a personalized curriculum. Block scheduling may inhibit inclusion efforts by its focus on group activities for a longer period of time.

Teachers

An item mentioned by one teacher involves incompletes. The fast pace of instruction proves burdensome to students who learn or work slower. This results in the student receiving an incomplete. Consequently, both the teacher who issued the incomplete and the student who received it have increased workloads the next semester. Or possibly teachers just issue higher grades to avoid the problem.

Electives are limited by the teachers available to offer them. Smaller schools with fewer teachers can generate fewer electives for students to take when not enrolled in a required course. This may present a situation of redundancy with teachers. One reported exhaustion from covering the entire curriculum in the fall and again in the spring.

Homework, too, presents a problem for block scheduling. Homework is the practice and drill of taught concepts.

Homework is the activity that keeps the lesson of the teacher on the mind of the learner and produces the memories that translate into learning. The shorter school year, as represented by the semester system, offers fewer opportunities for homework assignments. On the other hand, school still dismisses at the same time and students still participate in extracurricular activities. Students still have the same amount of time after school, for this time has in no way been expanded.

Consequently, teachers have only two viable options. The first option for teachers is that of a reduced number of homework assignments due to fewer instructional days, which results in fewer reinforcement activities for the student. This approach would likely diminish a student's chances of grasping of a taught concept. A teacher's second option is to use the end of class to begin or complete homework assignments as one of the activities mentioned by teachers for use in block scheduling. Unfortunately, this latter technique for providing practice reduces instructional time and defeats the goal of block scheduling by using time that could be used for teaching new concepts or tying together concepts taught during the presentation of the lesson.

The smallest group to respond to the survey was vocational teachers. Vocational teachers had no special

concerns regarding block scheduling. One group, though, did not like it. Vocational teachers who taught traditionally year-long double blocked classes now have their time with students cut in half. This prevents these instructors from completing the career assessment inventories, providing vocational guidance, and providing instruction in professional standards for their selected vocational field, all once a routine part of the class.

Physical education and performing arts teachers expressed an almost unanimous appreciation for block scheduling. Office technology and business, as well as vocations, also appreciated block scheduling, although to a lesser degree.

This researcher did not define a category for foreign language teachers on the questionnaire. All teachers who selected the category of "other" and then identified themselves as a foreign language teacher indicated a distinct dislike for the block scheduling. First on the list of reasons was the lack of time available for reinforcement and practice of the language being learned. Foreign language teachers have the same concerns and perspectives of time held by core teachers.

One side effect of the schedule involves teacher collegiality. Many schools developed a divided faculty over

the issue of implementing block scheduling. However, this professional difference of opinion is not the most dangerous threat to teacher unity. Respondents in their second year of block scheduling and beyond find that the schedule generates teacher competition for students.

Teachers in the performing arts desire year-long classes in order to better prepare students for performances with a predictable enrollment. Also, students must take electives, and teacher positions seem generated by the numbers of students drawn to particular curriculums. More than one complaint came from teachers revealing that students gravitated to easier teachers to work off their "graduation requirements" leaving experienced teachers, performing arts teachers, and vocations teachers frustrated. Consequences of this phenomenon seem to be dividing staff and germinating personal fears and frustrations. Another consequence may be a lowering of academic standards to encourage student enrollment in a particular class.

Another perspective presented regarding this competition for students includes AP and honors classes. Teachers of these classes generally have their students for a year, thus making these students immune from the shortcomings of the block schedule. It also keeps them from circulating to other teachers for the variety of electives

needed by all other students. These classes, as a rule, contain the brightest, most motivated students along with the smallest enrollments. Responses hinted at the condition of a block of teachers who considered themselves more important than the rest of the teachers. This is a plausible scenario for AP and SAT test results are a measure of the school as broadcast to the public through the media. This may be a potential school culture problem that is just now rearing its ugly head in some schools.

One unforeseen consequence of block scheduling arises from the standards governing instructional personnel from the Southern Association of Schools and Colleges. Standard 4.5.4 (Southern, 1995) reads as follows:

> Instructional personnel may work in areas other than their major field of study, or areas for which they are certified, for less than a major portion of the school day, provided they have earned at least 12 semester hours in each of such areas (p. 13).

A major portion of the school day is not defined in the standards. If one interprets this to be one-half or less of the academic instructional day, then a teacher working in block scheduling may teach two of the three classes taught outside his or her major area of study each semester. Thusly interpreted, that same teacher may teach outside of the major area of study for two-thirds of a school year. This is a much higher percentage of instruction outside one's major

area of study than could take place with the traditional schedule.

Clubs

Clubs present two primary benefits for students. They are great socialization agents which promote social skills and teamwork and school spirit. They are also great teachers for they represent opportunities for students to engage in the actual practice of the skills these organizations promote. Clubs seem to be adversely affected by block scheduling. Students used to be enrolled in courses for a year and enrollment was stable for that year and probably the next, as students routinely enrolled in the sequential course. Vocational clubs, music clubs, foreign language clubs, and others sponsored by classes represented academic/social or vocational/social units that held together, learned together, and competed together. Students often took two or more years of a club sponsored class.

Block scheduling does not allow that luxury. Students take a class for a semester and are members of the club sponsored by that class for that semester. A sequence to that course seems often not be taken until a year later. This lack of continuity in courses and club enrollment hurts these extracurricular organizations so vital in promoting the goals of the schools and society.

Block scheduling emphasizes electives, especially academic ones. Consequently, vocational teachers report their electives are declining, a phenomenon possibly due to a lack of emphasis in vocational classes and a small number of teachers available to offer those electives. Students are "guided" into academic electives in which they have little or no interest, heretofore would not have taken willingly, and which have become semi-requirements. Efforts at establishing true cooperation among students and appreciation for the necessity of teamwork advanced by block scheduling proponents is again defeated by the very engine designed to produce them.

Interruptions and Instructional Time

Block scheduling advocates promote the concept that fewer class changes reduce the number of interruptions to the instructional day. However, there are many more interruptions to the instructional day than just the changing of classes. Fire drills, assemblies, special events, calls for students, and announcements are integral ingredients of the school day. Only by reducing their number can such interruptions become less of a problem.

For instruction with block scheduling, such interferences in the school day are a greater problem. Due to the shorter number of actual instructional hours or

sessions, each interruption takes a larger percentage of the instructional time in a block period than in the traditional period, a phenomenon that increases in severity during the course of the academic semester. Instructional time lost due to class changes is reduced, but this may be more than offset by the total cost of any other interferences in instructional time.

The issue of instructional time takes on two other considerations. The first comes with the activities teachers utilize while teaching with block scheduling. Cooperative learning, seminars, games, and hands-on activities consume a great deal of instructional time on a single endeavor. This is noted in the responses to the specific research question regarding teacher practices, Questionnaire Item Six. Teachers who explained why they employed these strategies did not always indicate their use to enhance the academic climate. Instead, the purpose stated was to fill time and, as noted earlier, to reduce paperwork. What should be the role of such "learning" activities? The type, frequency, and purpose of activities are serious considerations for teaching with block scheduling.

Though many respondents did indicate an increased use of activities, they did not indicate that using such activities increased student learning. One did state that

including such activities made planning easier. One did state that such activities were not necessarily useful. And one did state that the problem of students finishing such activities early presented a problem. With a longer class, potential exists for a much longer span of time from the moment the first student or group finishes an activity to the moment the last one finishes. This wait time is wasted time. What does a teacher do in such a situation?

A second aspect of instructional time concerns attention span. Numerous teachers indicated that holding the attention span of students for 90 minutes proved difficult. Some even stated that it was impossible. Research has indicated that holding attention spans for the average adult for more than forty minutes is an achievement (Parasuraman, 1979, Stallings, 1985). In academic classrooms the emphasis is not on hands-on activities, as opposed to auto mechanics or carpentry where the basic emphasis of attention and activity routinely changes due to the very nature of the subject. Independent research conclusions regarding the limits of holding one's attention and the responses gathered in this research effort indicate that the extra time for a class provided with block scheduling may not be profitable in terms of increased learning. The question germinated from inferences taken repeatedly from the responses and by the

results of research on human attentive capabilities is, "Can the average and below average student attend to one subject for that long?" Evidence regarding the limits of human attention span and the reports from the participants in this research effort indicate that the answer to that question tilts toward a negative conclusion, a contrary effect to the one intended by the advocates of block scheduling.

Student Teacher Interactions

A prominent advantage of block scheduling as advanced by advocates of the concept lies with the potential benefits of longer classes for teachers and students to develop closer relationships. This research effort has not indicated that this possibility has become a reality. Very few teachers noted the ability to know the students better.

Explanations pertaining to student/teacher relations focused on a positive and two negatives. The positive was the ability to provide much more individual assistance within the longer class period.

One negative includes the joy at losing a group of students at mid-year, a rationale generally accompanied with the clarifier of losing bad students and the implied assumption that the next group will be better.

The second negative was repeated several times and represents the opposite effect of that predicted by block

scheduling advocates. Several teachers indicated the disappointment at not getting to know a group of students or losing a group as the teacher and students were getting to know each other or just as a bond had been formed. Guidance counselor responses included the concern regarding a lack of year-long teacher/student relationships and the need for increased counseling brought about by this condition. The preponderance of responses produced by this research effort indicates that block scheduling does not support the creation of improved teacher/student relationships.

CHAPTER 5

CONCLUSION

Chapter 4 reported on the statistical analysis of the data, listed examples of the respondents' explanations regarding each questionnaire item, and provided an analysis for each segment of the research effort. The next step of the research effort is to assimilate the totality of information gathered and produce a comprehensive summary of the trends of thought as revealed by that accumulation of knowledge. The researcher will include provide in this chapter the overall findings of the research effort, provide a summary of the overall results, state conclusions derived from the information, and state areas for possible future research.

Carter (1993) describes the story deriving from qualitative research as not merely the raw data from which to construct interpretations, but as "products of a fundamentally interpretive process that is shaped by the moralistic impulses of the author and the narrative forces or requirements" (p. 9). This researcher has taken the data collected by the literature review and from the field research, uncovered the pieces of the puzzle as revealed by the totality of data, and put these pieces together to

produce a narrative picture of the activities surrounding block scheduling.

This researcher wished to discover the degree to which the ideals of block scheduling as advanced by advocates of the concept have reached fruition. An attempt is made to report upon all perspectives of the scheduling concept as they relate to teaching and learning, not just the scheduling design itself. This became necessary because of the great number of educational ideals touched by the advancement of this scheduling design. A ripple effect has been advanced by proponents of the reform reasoning that implementation of the scheduling concept will necessarily affect many other processes inherent in the school environment. The expressed potential benefits for block scheduling are many, but have they been realized?

The media frequently report some research data or study commission finding pointing to the need for school reform. Announcing a need or a plan to reform schools is a safe public or political pronouncement. However, this term "reform" means change, nothing more and nothing less. Most people associate the word with improvement. Rational persons wonder why another or an organization would suffer the trouble of change if not for the expectations of betterment. Block scheduling is a change that is gaining acceptance in

the public schools, especially in high schools. Is block scheduling an improvement?

Findings

This researcher has determined that the arguments advanced by the advocates of block scheduling that are under study in this research effort as a school improvement reform seem generally unsubstantiated. This researcher wishes to present a personal perspective of the information gathered through both a review of the literature and the field research conducted during this research effort. These perspectives will assist the reader in understanding the broader base of rationales supporting the conclusions found within this chapter.

Analysis of the Literature

When one commences a search for information regarding block scheduling, one acquires a bulk of resource references. However, many of these references have nothing or very little to do with the subject of school schedules, referring instead to hospitals and other types of organizations. Of those references that do relate to schools, many refer directly to another subject such as site-based management, with block scheduling merely a mention in the reference. One source (Vogel, 1996) is titled

for block scheduling but is nothing more than an hour long advertisement for the 4MAT system of instruction. No information exists in these sources that pertains to implementing or studying the actual block scheduling process as it is used today in public schools. There exists a paucity of information regarding the overall functioning of the public schools operating with block schedules.

This dearth of information refers not only to the number of articles but also to their quality. Though Chapter 2 presents an array of research findings that conflict with the claims of the block scheduling advocates, this analysis will focus primarily on the articles published by block scheduling advocates themselves. One can acquire an adequate portrait of block scheduling by reading either Carroll's "The Copernican Plan Evaluated" (1994, October) or Canady's and Rettig's book Block Scheduling: A Catalyst for Change in High Schools (1995), an uncomplicated and quick read. Reading sources outside these two in the search for the rationales behind the development of and justification for the varieties of scheduling possible reveal only redundancy.

The collection of references found by this researcher relating directly to block scheduling in the public high schools numbers 35 Of this total, thirteen citations contain no references and either express a viewpoint, relate

anecdotal experiences, contain an interview, or consist of reviews of works already published. These thirteen published efforts represent a misleading presentation of the facts. All of these articles present all the advantages and successes of block scheduling without listing a single reference one may use to verify the remarks.

Of the remaining 21 references, eleven were written by either Canady or Carroll.

Studying the references used by these two authors, one finds that they fall into three general categories: citations stating the need for change in our schools, citations providing statistical information such as school governmental documents, and references to the possible advantages and study of block scheduling. Carroll generally cites no references for the need or advantages of block scheduling, confining his citations only to ones declaring the need for changed schools. Canady uses citations justifying the use of block scheduling, but generally confines those citations to himself. Of the seven articles he wrote, he cited himself 32 times in justifying the need for and advantages of changing school schedules. In one article Canady had no citations. He also used doctoral dissertations as a reference six times,references from the school at which he teaches, the University of Virginia.

Of the remaining 10 articles, citations fell into the same aforementioned categories. Almost without exception, the only direct citations to the benefits of block scheduling relating back to published works of either Canady or Carroll.

Another element rests with topic academic improvements in students. Most articles relating positive results in student achievement cite improved grades along with state test results that illustrate no difference between the scores of blocked and non-blocked students. Standardized test results either remained unchanged or declined. A related consideration lies with the fact that schools, in response to parent concerns regarding declining ACT and SAT scores, adopted year-long classes for advanced placement students.

Many block scheduling articles open with definitive phrases. Carroll (1994b) opens with a good news/bad news statement. He reveals the good news is that all we have to do is apply what research tells us about better instruction and we can meet the economic and civic demands of the public. Canady (Canady & Hotchkiss, 1985, Summer) state that there is a growing body of evidence that school administrators should direct greater attention to structuring the school day. The problem lies with the

verbiage that follows these opening lines. No evidence or research ever appears or is ever cited, aside from their own publishing efforts, relating to how a change in the school day schedule for students **may** relate to improving teacher instruction or assist in meeting any societal economic and civic demands. No justification from an independent source is named to demonstrate why attention to this reform should take place at all.

Finally, this researcher finds the omission of block scheduling from many sources significant. References to block scheduling derive almost without exception from Educational Leadership, Kappan, and the May 1995 NASSP Bulletin. Two articles do appear in The Science Teacher and one in English Journal, but these are anecdotal and contain no references. Information regarding block scheduling can hardly be found in subject specific journals. None of the educational research journals, such as Reviews of Educational Research, have printed articles on the subject. Works describing the professionalization of teaching and developing collegiality among the faculty or the efficiency of organization do not offer block scheduling as a suggestion. Vast numbers of articles on projects describing or documenting changes in student learning fail to mention block scheduling as a contributing factor. Aside from

articles authored by Carroll and Canady or direct references back to these two gentlemen, block scheduling represents a non-topic for educational journals.

A common reference to all articles regarding block scheduling cite A Nation at Risk, published in 1983, as pointing out the need for change in the way in which public schools are operated. This work, which is used in this project to divide earlier efforts at block scheduling and the present efforts, submits its curricula recommendations for expanding instruction in the core curriculum. These recommendations are in opposition to those of block scheduling proponents who promote the number of electives a student can acquire under the nontraditional time system. A Nation at Risk refers to these same electives as "a cafeteria-style curriculum in which the appetizers and desserts can easily be mistaken for the main course" (p. 18).

Furthermore, this United States Department of Education report recommends that students be given more homework and attend longer school days and longer school years, not longer class periods. The advocates of block scheduling advance a scheduling design that increases the number of subjects a student may take during a year while simultaneously reducing the number of days a student has for

homework and the hours available to receive in-class instruction.

Nearly every article related to block scheduling published since 1994 has cited Prisoners of Time (Report, 1994) as a document supporting the block scheduling concept as advanced by current advocates of the scheduling design. Findings presented in this report seem to support the arguments for block scheduling. The report declares the fixed clock and calendar to be fundamental design flaws of schools that must be changed, academic time has been stolen to make room for a host of nonacademic activities, educators do not have the time they need to do their job, and mastering world-class standards will require more time for almost all students. This report puts forth suggestions actually in opposition to the goals promoted by advocates of block scheduling. Prisoners of Time advocates a longer day and year-round schooling. Prisoners of Time makes the following statements early in the report:

> We have been asking the impossible of our students--that they learn as much as their foreign peers while spending only half as much time in core academic subjects (p.4).
>
> Despite the obsession with time, little attention has been paid to how it is used: in 42 states examined by the commission, only 41 percent of secondary school time must be spent on core academic subjects (p. 7).

The members of this landmark commission reported alarm at the obvious expansion of high school courses not part of the core curriculum. Their recommendations to reduce the number of these classes and increase the time in core classes with demanding curriculums represent suggestions in direct opposition to the ones advanced by block scheduling advocates. Block scheduling advocates have provided misleading information and thus overstated their federal support base.

Reactions against the call by A Nation at Risk for massive educational change began almost immediately. One of the first reports came from the Department of Education, the same organization that published the initial work. In response to the alarming finding that teachers were "being drawn from the bottom quarter of graduating high school and college students" (p. 22), a committee was established to study the problem. The report (Tomorrow's, 1984) made the following two observations:

> Potential teachers do not differ significantly from the general college population in high school and college grade point average (p. 4).
>
> These study results suggest that the nation is not facing a major crisis of quality among potential teachers. The historical trends do not indicate that there is a significantly less able group planning to be educators today than was the case ten years ago (p. 31).

The report was never made public because the United States Department of Education sought information verifying their condemnation of public schools and that teachers were the cause of mediocre school systems nationwide. However, the effort to paint a more rosy picture of our educational systems did not terminate with this effort. Notable works portraying the successes of the schools are those by Pauly (1991), the often appearing Gerald Bracey reports published in Kappan, the Sandia Report (1992) published in the May/June 1993 issue of The Journal of Educational Research under the title "Perspectives on Education in America," and Berliner's and Biddle's work The Manufactured Crisis published in 1995. There is no consensus that the American education system is in a state of crisis and in need of a systematic reform of the type block scheduling advances.

Finally, the "brain-based learning" points advocated in some block scheduling articles are also suspect. Shortt and Thayer (1995) advance the longer class period as advantageous for allowing teachers the time to connect students with familiar concepts and prior knowledge in order for students to make the mental connections necessary for facilitation of learning and thus eliminating the teaching of isolated concepts dictated by teaching with the shorter traditional class period. The process of making neural

connections with familiar concepts as promoted by "brain-based learning" advocates fails to represent the whole story of how the brain operates. The educational side of "brain-based learning theory" promotes teaching to patterns and making associations to prior knowledge (Caine & Caine, 1995). However, this familiarity concept is simplified by Gordon (1995) who states:

> You almost never create totally new memories. You are never told a story, for instance, in a totally alien language, about a totally alien culture, and asked to remember it. Instead, you hear the story in sounds that are already familiar to you, in words and sentence patterns that are already familiar to you, and in connection with events and people that are probably at least somewhat familiar to you (p. 44).

From a concept this simple, all learning experiences taking place in a person's native language occur within the natural and unavoidable conditions of meaning, familiarity, and prior knowledge. No added classroom time is necessary.

Many of the published studies advancing block scheduling displayed a rise in grades but not a corresponding rise in achievement scores. These findings provoke interesting questions. Do measures on end-of-course tests measure learning, and, if so, at what level? Does a rise in student grades accompanying a transition to block scheduling represent greater student learning, or is this a

consequence of another phenomenon? How can one explain the discrepancy between rising grades, as found with research by Salvaterra & Adams (1995) and with the results from questionnaire item seven of this research effort, and stagnant or falling achievement scores from nationally normed tests for students in settings using block scheduling as shown by studies cited in Chapter 2? Is there grade inflation? Is it the Hawthorne effect of the initial visibility of a new project resulting in efforts to make it appear in the best possible light? What factors could explain this phenomenon? If block scheduling automatically leads to improved teaching and learning and a broader curriculum, why do the academic elite receive the additional hours of instruction and fewer electives? Carroll (1994b) himself makes the following observation about the American education system. This sober observation is also appropriate for topics in education beyond block scheduling:

> The first premise is that when a teacher awards a student a high grade, it is evidence that the teacher believes that the student mastered more of the objectives of the course than did a student who received a lower grade. The second premise is that if students complete more courses successfully they have mastered more of the school's academic program than would be the case if they had completed fewer courses. If these premises aren't true, American education is really in deep trouble (p. 112).

O'Neil (1995) declares the important issue is that students on block schedules are not scoring any lower on achievement tests. This is an important issue, but is it one to support the upheaval of the school-wide change to block scheduling? Does this pronouncement promote block scheduling or create doubt in a potential practitioner considering the reform process? The North Carolina document (The Block) states that, "However, the document does conclude there is no direct evidence that, on the whole, block scheduling is harmful" (p. 17). Is the preliminary finding that a reform is not harmful adequate reason to proceed with its adoption? Is this why Canady does not proclaim any academic achievement advantages for students in his comprehensive 1995 book?

O'Neil (1995) relates that the important issue is how much students are learning and that their achievement test scores have not gone down? Would parents agree with this perception? What evidence is there for greater student learning if all that can be presented is achievement scores that do not decline? Rettig admitted at the workshop (mentioned in Rettig, 1997) that little actual documentation exists after all these years.

After reading the lists of advantages of block scheduling and the multitude of teaching strategies that can

be employed within a block scheduled classroom, this researcher wonders what is new. Every advantage and every strategy mentioned can be conducted in a traditional year long 50-minute classroom. Varied teaching strategies that include cooperative learning, team teaching, using technologies, breaking the class period into segments, and 4MAT are not characteristics or methods of teaching unique to classrooms using block scheduling. Using these strategies do not produce better teacher/student relationships only if used in block scheduling.

Combining these perspectives with the unchallenged criticism that no definition exists for creative or flexible teaching that can be used in evaluating a teacher, that teaching methodology has no effect on learning (Armor, 1976, Murnane & Phillips, 1978), that a host of other factors are influential in determining teacher methodology (Dreeban & Gamoran, 1986, O'Reilly, 1988), and that no evidence exists that a creative teacher is more effective than a less creative one (Flanders, 1985), one must wonder why there is a fuss over the topic. If teachers did not use multiple methodologies, studies could not have been performed to determine why some were preferred over others and in what contexts. Are proponents of change merely advancing the argument that such teacher and student behaviors did not

occur in order to justify a personally preferred reform? Farnham-Diggory (1994) finds that there are only four teaching methods and they are all found whenever a teacher is present:

> a. Talking--lecturing, telling, reading...
> b. Displaying--modeling, showing, demonstrating
> c. Coaching--pointing out cues, suggesting changes, guiding (all this while the student is doing something
> d. Arranging the learning environment--setting up a self-instruction situation.
>
> All other tactics--reinforcement, use of media, and so forth--can appear in all four categories (p. 470).

After reviewing the work of Phelan, Semb, Turley, and others, this researcher questions the wisdom of the generalized targeting of teaching methodology as a valid consideration for reaching the very laudable goal of improved student learning? Research consistently shows a student's perceptions of the teacher, not the teacher's instructional practices, make a difference in that student's willingness to pay attention to what the teacher is presenting in class.

The Questionnaires

This researcher became unsettled by the explanations received on the questionnaires. The tone of explanations that followed the initial answer selection often did not

support that answer choice. In other words, the story presented by the respondent did not match the selected answer category. Many neutral and positive answer selections were punctuated with negative rationales. In yet other circumstances, the rationales did not pertain to either the question or the answer choice and were often interpreted by this researcher as not logical. Reading the sample responses provided in Chapter 4 illustrates well the problems with interpretation of the quantitative data. As indicated in Table 4, a large number of respondents provided neutral responses with no explanation. These realities construct a condition in which the story related by explanations is not represented by statistics based upon initial answer choices. All of these conditions tend to skew the quantitative results, which are established by the first answer choice without regard to explanation, in directions not supported by the narrative data. The numbers do not tell the story and their interpretation leads to misleading conclusions.

Table 17 illustrates this discrepancy between the initial statement and the stated rationale. This researcher assigned a value to only the explanations. Results do not include responses deemed by this researcher to be not pertinent to the questions of study. All percentages are rounded off to the nearest whole number.

TABLE 17

VALUES ASSIGNED TO EXPLANATIONS FOR SPECIFIC QUESTIONS

		1	2	3
Question 8: With block scheduling, has student classroom behavior improved, remained about the same, or worsened? Why?	Core	39 (49%)	20 (25%)	21 (26%)
	Noncore	18 (51%)	10 (29%)	7 (20%)
Question 11: Is more, less, or about the same subject matter covered during a semester? Why?	Core	99 (78%)	9 (7%)	19 (15%)
	Noncore	23 (51%)	12 (27%)	10 (22%)
Question 12: Is subject matter covered in more depth and breadth, less depth and breadth, or about the same depth and breadth? Why?	Core	66 (63%)	21 (20%)	17 (16%)
	Noncore	15 (39%)	16 (42%)	7 (18%)
Question 13: Do you perceive that students are learning more, less, or about the same as they did under the traditional schedule? Why?	Core	50 (56%)	30 (33%)	10 (11%)
	Noncore	18 (40%)	25 (56%)	2 (4%)
Question 14: Are student projects more thorough, less thorough or about the same as those submitted with the traditional schedule? Why?	Core	30 (42%)	26 (37%)	15 (21%)
	Noncore	7 (24%)	12 (41%)	10 (34%)
Question 15: Do you give assignments that make greater use of, less use of, or about the same use of the library? Why?	Core	38 (54%)	23 (32%)	10 (14%)
	Noncore	7 (28%)	15 (60%)	3 (12%)

This table spells out clearly the differences between core and noncore teachers regarding the influences of block scheduling. Though little difference appears between the two groups regarding the subject of classroom behavior, obvious differences occur in the other two topics covered by these questions. Core teachers are much more concerned about the decline in the amount of subject matter taught, the quality of what is being taught, and the resulting student learning than are noncore teachers. On the other hand, noncore teachers are less concerned about the quality of student projects and use the library more often than core teachers. This researcher believes that these storied responses render a truer picture of the influences of block scheduling than do the quantified data that are based solely upon the initial answer selection.

The research findings regarding what teachers appreciate most about block scheduling found in Table 14 caused this researcher concern. The six items mentioned most frequently by teachers as aspects they appreciated about block scheduling have little or no direct relation to teaching and learning. They all pertain to appreciating a reduced work load. The stand-out aspect of appreciation concerned being away from the students for a longer period of time.

On the other hand, the aspects of block scheduling that trouble teachers found in Table 15 lie with teaching and learning. All but two of the items identified as troubling relate to student learning, or lack of student learning in this case. Only concerns over scheduling and not getting to know students do not pertain directly to teaching and learning.

The results, when the unstoried and illogical responses are factored out of the discussion, display schools divided into two camps. Generally speaking, arts, PE, vocations, and office technology teachers favor block scheduling. PE gave it the highest marks. Arts and drama were next, especially if their course had become a year-long one and thus defeating in another arena the design of block scheduling. Generally speaking, the more teaching experience possessed by the teacher, the more negative the remarks, and the longer the experience with the block schedule the more negative the remarks.

Core academic teachers do not like block scheduling. This includes foreign language teachers. As noted in previous analyses of questions, science teachers, the group singled out by advocates of block scheduling, did not signify labs as a favorite aspect of the scheduling design. Nor did the sample block of science teachers indicate that

students are learning more in science classes. This researcher concludes that science classes and science teachers have more in common with other core classes and teachers than block scheduling advocates acknowledge.

The "comments" section pointed to a host of problems, many heretofore not publicly recognized. Though unheralded before, these problems are issues within the realm of block scheduling that have arisen without accompanying solutions. As stated by more than one respondent, block scheduling is great for teachers but not for students.

Summary

Research Question One reads as follows: Have teachers who worked with the traditional schedule and now work with some form of block scheduling changed their instructional practices? The first research question produced results on the questionnaires that display the lack of change possible. Teachers could not add teaching strategies for they already used a great many strategies. Teachers cannot begin doing what they are already doing. The first indications of the true question regarding block scheduling arose with this question--that of time. More detailed lesson plans were required to fill the added instructional period. Consequently, the longer planning period was consumed with planning and not by the congenial or collegial relationships

that produce a sharing of information and ideas among teachers. Furthermore, the fewer number of class changes reduced the number of school day opportunities for teachers to share experiences.

Research Question Two reads as follows: Are students taught in a block scheduling environment provided access to more meaningful learning experiences than students who are taught in the traditional system? The second research question pertained to teaching and learning. Responses taken from this question produce a dichotomy between core and noncore teachers. Core academic teachers produced the bulk of the negative remarks. They believe that less is being taught and less is being learned. They also cite using fewer projects or even eliminating projects from their instructional methodology.

These responses brought to the forefront again the question of time. Negative responses were dominated by the perception of time as the duration of the semester. This is the same definition advanced by authors of A Nation at Risk and Prisoners of Time. Positive remarks were dominated by the perception of the longer instructional period. This is the definition advanced by advocates of block scheduling.

Research Question Three reads as follows: Is the school-wide change to block scheduling beneficial for all

students? The third research question pertained to benefits for students. Grades have risen but standardized test scores have not. Classroom discipline is generally worse. Interschool competitions, school organizations, and vocational classes are suffering.

The issue of classroom discipline revolves around an issue raised by many of the respondents in the second research question, attention span. Respondents named attention span repeatedly as a reason for reduced learning and for increased classroom restlessness. There is no indication that students can attend to a subject for 90 minutes and independent research indicating that they cannot.

Open-ended questions produced a surprisingly important ingredient to this research effort. The aspects teachers like about block scheduling are those that reduce the overall teaching effort. These are teaching fewer classes, changing students at mid-year, longer planning, and fewer students at any given time. The last item is noteworthy for it does not relate to smaller classes. This list is remarkable for its absence of aspects recognizing better teaching and learning.

Aspects of block scheduling not appreciated by teachers include a multitude of student oriented results. Increased

classroom behavior difficulty, lag time between courses, effects of absences and interruptions, and interest for the average and especially the below average student dominate these remarks. Core academic teachers bemoan the far fewer instructional hours and reduced subject matter retention in students. Noncore teachers display a particular interest in the decline of interschool competitions, clubs, and vocational classes.

This researcher understands the distinguishing factors between the positive and negative remarks of the "Comments" section to lie with the provided rationales. Positive responses seem not to produce supporting rationales. Negative remarks do. A reading of these remarks further highlights how the unstoried responses betray the true story of the respondents.

The outside of the classroom responses often reinforced the opinions of the teachers. Guidance counselors noted the scheduling conflicts for students, the inability for a student to repeat failed courses quickly, attention span in longer classes, more rapid pace of instruction, and lower quality teacher/student relationships. Music instructors noted scheduling conflicts for students, loss of student continuity of participation, and a reduced competitive edge. Media personnel noted student transfer issues, the lack of

enrichment activities, and reduced media center use by core academic classes.

The concluding element of Chapter 4 portrays aspects of block scheduling that arose from the responses that were not anticipated at the initiation of this research effort. Considerations listed illustrate well the value of qualitative research in revealing hidden stories and concerns. These aspects of block scheduling must be considered by schools or school districts that are or may be contemplating the implementation of the scheduling innovation.

Advocates of block scheduling promote a reform they claim will fit into the existing school structure without any changes in that structure. This has not proven true. Implementation of block scheduling has impacted teaching and learning in ways not anticipated by anyone, including the advocates of the organizational design, and in a manner not supportive of this school organizational design.

This researcher determines the most critical element of the block scheduling debate revolves around its definitions. There are no definitions other than specific situational ones to the terms "more," "less," "flexible," and "meaningful." No examples that might be used for comparison are ever provided by the advocates of block scheduling to

help explain what they mean by these terms. Advocates have never identified teaching strategies not already in use by teachers to provide an idea of what could be accomplished by a teacher. Advocates have not produced tangible evidence of more learning in students or fewer discipline problems in the classroom. Of course, a primary focus of the block scheduling debate lies with the definition of the word "time," a term having two distinct and incompatible definitions for the purposes of this debate.

Concluding Statements

Any change in school structure must be accompanied by effects that the change imposes upon that structure. Solitary changes do not produces solitary results. Instead, any organizational change produce a variety of alterations on the organization receiving that change. This research effort sought to study the effects of one organizational change, a change being implemented in schools known as block scheduling.

The purpose of this study was to investigate the relationship between the theories of block scheduling and the actual effects of this attempt at school reform on teacher practices and student learning. This researcher had no prior knowledge of this relationship but knew that one certainly had to exist.

One segment of this research effort concerned teacher practices. Block scheduling advocates indicate that the longer class session requires teachers to alter their methodologies and adopt more group-oriented activities. This researcher did not find that teachers had changed their teaching strategies when changing from teaching with the traditional schedule to teaching with block scheduling. Questionnaire Item Six produced results displaying that teachers use the same teaching techniques they used with the traditional schedule. Teachers reported varying the frequency at which a technique is used but did not report adopting new strategies for teaching with block scheduling. The initiation of group-oriented activities were described as filling time more often than they were described as learning activities.

This research finding supports earlier conclusions of Dreeben and Gamoron (1986) and O'Reilly (1988) who found a host of other factors influenced teaching strategy. One of these factors was the time of day, but the length of class was not mentioned.

A second focus of this research effort included effects of block scheduling on student learning. Inquiry into this topic yielded mixed results. Teachers of core academic subjects generally believe that they are teaching less and

students are learning less with block scheduling. Information found in the literature (Raphael, 1986a, Raphael, 1986b, AP, 1996, Carpenter, 1997) support the premise that students being taught in block scheduling learn less. Yet, the literature search revealed data of this nature are minimal.

However, noncore teachers thought that lessons were covered in more depth and breadth and that just as much or more subject matter was being covered in class. The same difference of opinion can be found with library use. Core academic teachers believe that with block scheduling they have less time to spend in the library and student projects are sub-standard. Noncore teachers believe students projects are better and they make better use of the library. These conclusions are substantiated in the responses to Questionnaire Items 11-15 and Table 15.

This second research focus brought to the surface two very important personal interpretations. The first is the definition of "time." Block scheduling advocates believe that more time in class enhances student achievement by allowing for a reduction in fragmented instruction caused by interruptions and class changes. Respondents painted two very separate perceptions of the concept of time. If respondents perceived time as a class session, remarks

regarding teaching and learning with block scheduling tended to be positive. If time was perceived as duration of subject matter instruction, a semester or a year, remarks regarding teaching and learning with block scheduling were more likely to be negative. Secondly, teachers providing instruction in courses subject to end-of-course tests generally held the latter definition of time and produced negative remarks. Teachers providing instruction in courses not subject to end-of-course tests provided the most positive remarks and were more likely to hold the former definition of time.

The third research focus included the general benefits of block scheduling for students. Block scheduling proponents advance that longer classes are more informal and that students and teachers will get to know each other better. This research effort did not find this necessarily true. Though some respondents did indicate getting to know students better, many more indicated disdain at having to change students before getting to know them or just as they were getting to know them.

Results from Questionnaire Item Eight indicate students become restless during the second half of a blocked period. Responses from several questionnaire items spoke to student problems with attention span. Research by Parasuraman (1979), Stallings (1985), and Humphrey and Kleiman (1982)

indicate that attention span is limited and this limitation is a genuine concern for teachers. Their research findings lead to questions regarding the possible benefits of longer classes.

Two other results have arisen due to perceived difficulties with block scheduling. First, honors and AP classes have become year-long courses in all the schools surveyed order to accommodate instructional needs surrounding passing college placement examinations. Second, All surveys indicated students are losing interest in school organizations and in participation in interschool competitions.

This research effort produced information not anticipated when this project was designed. Responses to open-ended questions revealed many of aspects not addressed with topic-specific questions. Aspects of block scheduling teachers most appreciate do not directly contribute to teaching and learning, such as longer planning periods and fewer preparations. This is illustrated in Table 14. However, the aspects of the reform teachers dislike fall primarily into the adverse effects the implementation of block scheduling has inadvertently produced for students, with perceived limitations in learning with average and below average students and the decline in student

participation in clubs as examples. Table 15 highlights these concerns.

This research effort may have value in revealing the multitude of aspects of school life touched by the implementation of this single reform. Using the Literature Review as a reference, many of these aspects were not anticipated by advocates of the reform and do not produce the overall effects on schools that its advocates believe it will. This research effort has led this researcher to the conclusion that the problems the reform produces are more numerous and of greater magnitude than the benefits it creates. Block scheduling does not appear to produce the desired results when implemented as a solitary reform within a school, the usual manner of implementing the reform.

This research effort, by revealing the multiplicity of activities within a school effected by simply changing the schedule, reveals possible facets of school life that will have to be considered for change simultaneous to the implementation of block scheduling. The words of Goodlad still hold true:

> We know that no single innovation or intervention will consistently and unambiguously make a difference in student outcomes (p. 90).

Changing a school should accompany the goal of improved student performance for that is a fundamental purpose of school. The results of this research effort, as interpreted by this researcher, do not indicate that the implementation of block scheduling will improve either the quality of teacher instruction or the level of student performance for the majority of students. Overall, results to the contrary seem more evident.

Questions for Further Research

All research raises questions. Some research efforts raise more questions than they ultimately answer. This effort proves no exception to this tendency. This researcher suggests five possible projects regarding the topic of block scheduling.

The first suggested effort surrounds the possible rise or decline of SAT scores. A comparison of SAT scores could provide the basis for some hard data from a standardized measuring instrument illustrating the value of block scheduling. Student scores in honors and AP classes with block scheduling would have to be compared to student scores in the same classes with the traditional schedule due to the difference in hours of classroom instruction, as these students in block seheduling receive more hours of instruction. A comparison of SAT scores for students in

regular classes would need to receive similar scrutiny due to the similar differential in hours of instruction, as these students in block scheduling receive fewer hours of instruction.

A second suggested study is a qualitative effort designed to reveal the process a school passed through before either implementing or rejecting block scheduling. The purpose would be to reveal the extent and content of discussions that took place.

A third suggested study focuses on the Southern Association standard that establishes the conditions by which a teacher may teach outside of one's major area of preparation. The question would be if teachers providing instruction with block scheduling are called upon to teach subjects outside of their major area of study more or less frequently than teachers teaching with the traditional schedule.

A fourth suggestion is to replicate this study. The objective would be to determine if teachers in other settings would produce similar responses and opinions as those gathered by this research effort.

The final suggestion lies with a total school reform effort. The objective would be to determine if a multitude of school change efforts could be combined with block

scheduling to produce the advantages now promoted by block scheduling advocates. The majority of negative comments came from core academic teachers whose students must take end-of-course tests. Charter and optional schools have the potential to re-form by implementing several changes at once. If efforts could be made to accommodate the problems created by block scheduling as revealed by this research effort and modify the curriculum to take the stress away from tests designed for courses of a longer instructional duration, might block scheduling contribute to a more persuasive and convincing reform effort?

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APPENDICES

APPENDIX A

The Questionnaires

Survey Questions for Teachers

1. ___Male ___Female

2. Subject Area: ___Social Studies ___Language Arts

   ___Science ___Mathematics ___Office Technology and Business

   ___Vocations ___Art, Drama ___PE ___Other

3. Years Teaching: ___0-5 ___5-10 ___10+

4. Number of Years with Block Scheduling: _____

5. Level of Education: ___Bachelor ___Master's

   ___Master's + 30 ___Ed.S. Ed.D.____ Ph.D. ____

6. What teaching techniques, if any, have you adopted for teaching in block scheduling that you did not use while teaching in the traditional schedule? Why?

7. With block scheduling, have student grades risen, fallen, or remained the same? Why?

8. With block scheduling, has student classroom behavior improved, remained about the same, or worsened? Why?

9. Are lesson preparations for block scheduling more difficult, about the same, or less difficult than those prepared for the traditional class? Why?

10. Has teacher collegiality improved, declined, or remained about the same? Why?

11. Is more, less, or about the same subject matter covered during a semester? Why?

12. Is subject matter covered in more depth and breadth, less depth and breadth, or about the same depth and breadth? Why?

13. Do you perceive that students are learning more, less, or about the same as they did under the traditional schedule? Why?

14. Are student projects more thorough, less thorough, or about the same as those submitted under the traditional schedule? Why?

15. Do you give assignments that make greater use of, less use of, or about the same use of the library? Why?

16. Has the quality of interschool competitions improved, remained about the same, or declined with block scheduling? Why?

17. What aspects of block scheduling do you appreciate the most? Why?

18. What aspects of block scheduling do you find most troubling? Why?

Comments:

Survey Questions for Guidance Counselors

1. ___Male ___Female

2. Years of Experience: ___0-5 ___5-10 ___10+

3. Number of Years with Block Scheduling: _____

4. Level of Education: ___Bachelor ___Master's

   ___Master's + 30 ___Ed.S. Ed.D.___ Ph.D.___

5. Are there differences with the academic guidance necessary with block scheduling from that seen with the traditional schedule? Why?

6. Are there differences in the problems regarding behavior with block scheduling than were found with the traditional schedule? Why?

7. Are you perceiving a difference in a student's ability to function academically in the classroom with block scheduling? Why?

8. Are you perceiving a difference in a student's ability to behave in a classroom with block scheduling? Why?

9. What aspects of block scheduling do you appreciate the most? Why?

10. What aspects of block scheduling do you find most troubling? Why?

Comments:

Survey Questions for Media Specialists

1. ___Male ___Female

2. Years of Experience ___0-5 ___5-10 ___10+

3. Years of Work with the Block Schedule: _____

4. Level of Education: ___Bachelor ___Master's

   ___Master's + 30 ___Ed.S. Ed.D.___ Ph.D.___

5. Are there differences in the manner in which the media center is used with block scheduling compared to the manner it was used with the traditional schedule? How do you explain these perceived differences or absence of differences?

6. Do you perceive the media center being used more or less frequently with block scheduling? Why?

7. What aspects of block scheduling do you appreciate the most? Why?

8. What aspects of block scheduling do you find most troubling? Why?

Comments:

Survey Questions for Music Departments

1. ___Male ___Female

2. Years of Experience: ___0-5 ___5-10 ___10+

3. Years of Instructing with Block Scheduling: _____

4. Level of Education: ___Bachelor ___Master's

   ___Master's + 30 ___Ed.S. Ed.D.___ Ph.D.___

5. With block scheduling, is student participation in band or chorus greater, less, or equal to that observed with the traditional schedule? Why?

6. With block scheduling, are the performances given by the band or the chorus of better quality, lower quality, or about the same as those performed with the traditional schedule? Why?

7. Do you perceive that your instruction is enhanced under block scheduling? Why?

8. What aspects of block scheduling do you appreciate the most? Why?

9. What aspects of block scheduling do you find most troubling? Why?

Comments:

LETTER OF INTRODUCTION

Date

568 Caribou Road
Asheville, NC 28803

Dear Fellow Educator,

My name is Frederic Muse. I am pursuing a doctorate from East Tennessee State University. My dissertation topic is block scheduling. The emphasis of this study lies with front line educators as yourself and with the effects of this innovative scheduling practice on teacher practices and student achievement. Neither assistant principals nor any other administrators are a part of this study.

Your participation is strictly voluntary. Names are not necessary but I have asked for specific demographic date for study of differences among groups. I ask you to contribute to this research effort. Even if you choose not to participate, return your survey with your reason, such as you are a new teacher and never taught with the traditional schedule or you just don't have time to assist me.

Please understand that these are not "Yes" or "No" questions. The **"Why"** is just as important as the initial response for these responses explain your reasons for the answer choice. Even if the "Why" is answered with phrases, the phrase can be complete enough to permit me to understand your thinking. Please note that the questions are open to your own personal interpretations of such vague terms as "more" or "fewer." Answer questions as they pertain to you, not as they pertain to anyone else or to a general philosophy.

I thank you for your participation. Please return these questionnaires by .....

Thank you,

Frederic M. Muse

APPENDIX B

TABLES

Explanation of Tables

The following is a compilation of the demographic and statistical tables not appearing in Chapter 4. They appear in numerical order. Chapter 4 indicates which tables pertain to which question. These tables are also appropriately labeled with the pertinent questionnaire item number. The same pattern of codifying the nature of the answer, identified as the term "Remark," described in Chapter 3 and in Chapter 4 applies to these tables. Negative remarks are indicated by the number 1, positive remarks by the number 2, and neutral remarks by the number 3. The percentage columns have the percent sign with the remark code and represent the percentage of respondents for that category, not for the sample.

TABLE 18

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 6

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	6	7	10	12	4	4	8	3	7	8	10	89
F	6	15	7	21	17	11	15	9	16	10	10	134
SUBJECT AREA												
SS	4	3	5	4	3	2	2	2	4	5	3	37
LA	2	5	3	6	5	2	8	3	5	5	3	47
SCI	3	7	3	4	5	1	3	0	4	1	2	33
MA	2	2	4	6	3	2	4	4	3	1	1	32
OT	0	1	0	2	5	2	1	1	1	0	1	14
VOC	0	2	0	4	0	1	0	0	0	3	6	16
ART	2	2	0	1	0	2	0	0	1	1	1	10
PE	0	0	0	3	0	1	3	0	2	0	0	9
OTH	0	1	2	3	0	1	2	2	3	2	3	19
TEACHING EXPERIENCE												
1	1	3	1	0	0	4	2	3	2	2	3	21
5	4	3	0	6	5	4	3	2	4	3	5	39
10	8	15	16	27	16	7	17	7	17	13	12	155
YEARS ON BLOCK SCHEDULING												
1	0	2	6	0	0	0	1	1	21	1	5	37
2	12	2	0	1	1	1	2	2	2	16	7	46
3	1	12	0	2	12	12	6	2	0	1	6	54
4	0	5	1	27	1	2	8	3	0	0	2	49
5	0	0	0	3	1	0	3	2	0	0	0	8

TABLE 18 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	7	7	8	20	9	6	9	2	1	6	8	83
M	6	9	8	12	10	8	12	6	11	7	7	96
M+	0	4	0	1	2	0	2	4	11	3	2	29
EDS	0	2	1	0	0	1	0	0	0	1	2	7

TABLE 19

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 7

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	11	6	13	13	5	4	8	6	3	7	8	84
F	7	11	7	15	20	11	11	5	18	11	7	123
SUBJECT AREA												
SS	7	3	5	2	4	1	3	1	3	3	4	36
LA	2	4	2	6	6	2	5	2	5	7	2	43
SCI	3	3	5	4	4	3	2	0	4	1	1	30
MA	3	1	4	4	3	3	4	4	4	2	2	34
OT	0	1	0	2	0	2	1	1	0	0	0	7
VOC	0	3	2	3	7	1	0	0	0	2	5	23
ART	3	2	0	1	0	2	0	0	1	1	0	10
PE	1	0	0	1	1	0	2	0	1	0	0	6
OTH	0	1	2	4	0	1	2	3	3	2	1	19
TEACHING EXPERIENCE												
1	1	3	1	0	1	4	0	2	2	2	2	18
5	5	3	0	5	6	4	4	3	5	3	2	40
10	13	12	19	23	18	7	14	6	14	13	11	150
YEARS ON BLOCK SCHEDULING												
1	0	2	17	0	0	0	1	0	19	1	2	42
2	15	1	0	0	0	0	0	3	2	5	7	33
3	4	8	0	1	14	13	6	3	0	1	4	54
4	0	5	3	26	3	2	5	4	0	0	2	50
5	0	0	0	1	1	0	3	1	0	0	0	6

TABLE 19 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	8	1	9	16	10	6	9	2	2	5	5	73
M	8	8	10	12	13	8	9	4	8	8	6	94
M+	2	9	0	0	3	0	1	5	10	3	1	34
EDS	1	0	1	0	1	1	0	0	1	1	2	8

TABLE 20

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 7

REMARK GENDER	1	2	3	TOTAL	1%	2%	3%	TOTAL
FEMALE	12	51	49	112	11	45	44	59
MALE	17	22	38	77	22	29	49	41
TOTALS	29	74	87	190	15	39	46	100

TABLE 21

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR QUESTION 7

REMARK SUBJECT	1	2	3	TOTALS	1%	2%	3%	TOTALS
SS	3	15	15	33	10	45	45	17
LA	4	18	16	38	11	47	42	20
SCI	3	11	14	28	11	39	50	15
MATH	11	8	13	32	34	25	41	17
OT	1	2	4	7	14	29	57	4
VOC	2	9	9	20	10	45	45	11
ART	2	4	4	10	20	40	40	5
PE	1	4	1	6	16	67	16	3
OTHER	2	3	11	16	12	19	69	8
TOTALS	29	74	86	190	15	39	46	100

TABLE 22

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 7

	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	2	10	5	17	12	59	29	9
5	4	16	16	36	12	44	44	19
10+	23	48	66	137	17	35	48	72
TOTALS	29	74	87	190	15	39	46	100

TABLE 23

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND BLOCK FOR QUESTION 7

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	3	17	22	42	7	40	53	22
2	9	15	18	42	21	36	43	22
3	6	22	24	52	12	42	46	27
4	10	17	21	48	21	35	46	25
5	1	3	2	6	17	50	33	4
TOTALS	29	74	86	190	15	39	46	100

TABLE 24

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 7

REMARK / EDUCATION	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	7	38	31	76	9	50	41	40
2	18	22	43	83	22	27	51	44
3	4	12	8	24	17	50	33	13
4	0	2	5	7	0	29	71	3
TOTALS	29	74	87	190	15	39	46	100

TABLE 25

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 7

REMARK / SCHOOL	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	3	3	13	19	16	16	68	9
2	1	8	9	18	6	44	50	9
3	1	4	15	20	5	20	75	10
4	7	7	14	28	25	25	50	13
5	4	11	10	25	16	44	40	12
6	0	13	2	15	0	87	13	7
7	1	7	11	19	5	37	58	9
8	7	0	4	11	64	0	36	5
9	1	14	6	21	5	66	29	10
10	4	7	7	18	22	39	39	9
11	1	7	7	15	6	41	47	7
TOTALS	30	81	98	209	15	38	47	100

TABLE 26

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 8

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	8	11	13	8	5	2	8	4	5	7	8	79
F	6	11	15	11	16	9	12	7	16	11	8	122
SUBJECT AREA												
SS	6	6	6	0	2	0	3	2	3	5	2	35
LA	2	4	2	3	7	2	6	1	5	4	3	39
SCI	3	6	3	4	3	2	3	0	4	0	2	30
MA	1	2	4	3	3	2	3	4	3	3	0	28
OT	0	0	0	1	0	1	0	1	1	0	1	5
VOC	0	3	1	4	6	0	0	0	0	1	5	20
ART	1	1	0	1	0	2	0	0	1	1	1	8
PE	1	0	0	2	0	1	3	0	2	0	0	9
OTH	0	1	2	1	0	1	2	3	2	4	2	18
TEACHING EXPERIENCE												
1	1	3	2	1	1	4	2	1	1	2	2	20
5	3	2	0	5	5	2	3	3	5	4	5	37
10	10	18	16	13	15	5	14	7	15	12	9	134
YEARS ON BLOCK SCHEDULING												
1	0	2	16	0	0	0	0	0	20	1	3	42
2	13	2	0	2	2	1	0	1	1	15	4	41
3	1	15	0	1	13	9	4	3	0	1	7	54
4	0	3	2	15	1	1	6	3	0	0	2	33
5	0	0	0	1	1	0	4	3	0	0	0	9

TABLE 26 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	5	5	9	11	9	5	9	2	2	5	8	68
M	3	11	9	8	10	3	9	4	9	8	5	79
M+	0	4	0	0	1	2	2	5	10	3	2	29
EDS	0	2	0	0	1	1	0	0	0	1	0	5

TABLE 27

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 8

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	28	26	49	103	27	25	48	58
MALE	23	19	32	74	31	26	43	42
TOTALS	51	45	81	177	29	25	46	100

TABLE 28

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK SUBJECT FOR QUESTION 8

REMARK / SUBJECT	1	2	3	TOTALS	1%	2%	3%	TOTALS
SS	11	5	17	33	33	15	52	19
LA	7	10	18	35	20	29	51	20
SCI	8	9	12	29	28	31	41	16
MATH	8	4	14	26	31	15	54	15
OT	1	0	4	5	20	0	80	3
VOC	5	5	7	17	29	29	42	10
ART	3	3	2	8	38	38	24	5
PE	2	5	2	9	22	56	22	5
OTHER	6	4	5	15	40	23	33	8
TOTALS	51	45	81	177	29	25	46	100

TABLE 29

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 8

REMARK / EXP	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	7	5	7	19	37	26	37	11
5	9	9	16	34	26	26	48	19
10+	35	31	58	124	28	25	47	70
TOTALS	51	45	81	177	29	25	46	100

TABLE 30

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND BLOCK FOR QUESTION 8

REMARK / BLOCK	1	2	3	TOTALS	1	2	3	TOTALS
1	10	12	20	42	24	28	48	24
2	13	12	16	41	32	29	39	23
3	9	15	28	52	17	29	54	29
4	18	4	11	33	55	12	33	19
5	1	2	6	9	11	22	67	5
TOTALS	51	45	81	177	29	25	46	100

TABLE 31

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 8

REMARK / EDUC	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	22	19	27	68	32	28	40	38
2	20	18	36	74	27	24	49	42
3	9	7	15	31	29	23	48	18
4	0	1	3	4	0	25	75	2
TOTALS	51	45	81	177	29	25	46	100

TABLE 32

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 8

REMARK / SCHOOL	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	7	4	3	14	50	29	21	7
2	4	6	13	23	17	26	57	12
3	2	7	9	18	11	39	50	9
4	15	0	4	19	79	0	21	10
5	2	5	14	21	9	24	67	11
6	0	3	8	11	0	27	73	6
7	5	3	12	20	25	15	60	10
8	4	3	4	11	36	28	36	6
9	5	7	9	21	24	33	43	11
10	5	3	10	18	28	17	55	9
11	3	8	5	16	19	50	31	8
TOTALS	52	49	91	192	27	25	48	100

TABLE 33

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 9

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	13	8	9	12	6	4	9	4	5	7	9	86
F	8	11	5	14	18	12	17	8	14	10	10	127
SUBJECT AREA												
SS	7	4	3	4	3	0	4	2	3	5	3	38
LA	4	5	1	5	5	2	9	2	3	4	3	43
SCI	4	6	3	5	4	3	3	0	4	0	3	38
MA	2	2	4	5	4	3	4	4	4	3	1	36
OT	0	0	0	1	0	2	1	1	1	0	1	7
VOC	0	2	1	4	7	1	0	0	0	2	5	22
ART	3	0	0	0	0	2	0	0	1	1	0	7
PE	1	0	0	2	1	2	3	0	1	0	0	10
OTH	1	1	2	0	0	0	2	3	2	2	3	16
TEACHING EXPERIENCE												
1	2	2	2	2	2	5	3	2	1	2	2	25
5	4	3	0	5	4	3	5	3	4	4	4	39
10	16	14	12	19	18	8	17	7	14	11	13	149
YEARS ON BLOCK SCHEDULING												
1	2	1	13	0	0	0	2	0	17	1	5	41
2	17	1	0	1	1	2	2	2	1	14	5	46
3	3	13	0	3	15	12	5	3	1	1	7	63
4	0	3	1	21	1	2	10	4	0	0	2	44
5	0	0	0	1	1	0	3	3	0	0	0	8

TABLE 33 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	10	6	6	16	8	10	11	2	3	5	10	87
M	8	9	8	10	12	4	13	5	9	7	4	89
M+	3	3	0	0	3	1	2	5	7	3	2	29
EDS	1	2	0	0	1	1	0	0	0	1	2	8

TABLE 34

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 9

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	68	16	28	112	60	14	26	58
MALE	41	13	26	80	51	16	33	42
TOTALS	109	29	54	192	57	15	28	100

TABLE 35

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR QUESTION 9

REMARK / SUBJECT	1	2	3	TOTALS	1	2	3	TOTALS
SS	22	5	8	35	63	13	24	18
LA	21	3	13	37	57	8	35	19
SCI	20	5	6	31	65	16	19	16
MATH	13	7	14	34	38	21	41	18
OT	5	2	2	9	56	22	22	5
VOC	8	2	4	14	57	14	28	7
ART	3	2	1	6	50	33	17	3
PE	4	2	3	9	45	22	33	5
OTHER	11	1	3	15	73	7	20	8
TOTALS	109	29	54	192	57	15	28	100

TABLE 36

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 9

REMARK / EXP	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	14	6	5	25	56	24	20	13
5	15	8	12	35	43	23	34	18
10+	80	15	37	132	61	11	28	69
TOTALS	109	29	54	192	57	15	28	100

TABLE 37

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND BLOCK FOR QUESTION 9

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	29	5	9	43	67	12	21	22
2	24	7	11	42	57	17	26	22
3	27	12	16	55	49	22	29	29
4	26	5	13	44	59	11	30	23
5	3	0	5	8	38	0	62	4
TOTALS	109	29	54	192	57	15	28	100

TABLE 38

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 9

REMARK / EDUC	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	43	17	20	80	54	21	25	42
2	44	10	25	79	56	13	31	41
3	18	2	7	27	67	7	26	14
4	4	0	2	6	67	0	33	3
TOTALS	109	29	54	192	57	15	28	100

TABLE 39

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 9

REMARK / SCHOOL	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	12	2	8	22	56	9	36	10
2	14	1	5	20	70	5	25	9
3	7	4	3	14	50	29	21	7
4	20	1	5	26	77	4	19	12
5	13	2	4	19	68	11	21	9
6	4	10	2	16	25	63	12	8
7	5	1	20	26	19	4	77	12
8	7	1	4	12	58	9	33	6
9	17	1	2	20	85	5	10	9
10	8	3	6	17	47	18	35	9
11	12	4	3	19	63	21	16	7
TOTALS	119	30	62	211	56	14	30	100

TABLE 40

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 10

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	9	8	9	12	7	3	7	4	2	7	8	76
F	8	11	5	16	17	7	14	8	18	10	8	122
SUBJECT AREA												
SS	6	3	3	3	4	0	3	2	3	4	4	35
LA	3	2	2	6	6	2	5	2	5	5	3	41
SCI	4	4	4	5	5	2	2	0	2	1	2	31
MA	2	3	3	4	2	2	3	5	3	3	1	31
OT	0	2	0	1	0	0	1	0	2	0	1	7
VOC	0	3	1	4	6	0	0	0	0	1	3	18
ART	2	2	0	0	0	2	1	0	1	1	1	10
PE	1	0	0	1	1	1	3	0	1	0	0	8
OTH	0	1	1	4	0	1	3	3	3	2	1	20
TEACHING EXPERIENCE												
1	0	3	2	1	1	3	2	2	0	2	1	17
5	5	2	0	4	5	1	3	3	4	4	3	34
10	13	15	12	22	18	6	15	7	16	11	12	147
YEARS ON BLOCK SCHEDULING												
1	0	3	12	0	0	0	0	0	21	1	2	38
2	15	1	0	1	2	0	2	2	0	15	6	43
3	3	11	1	0	15	9	5	2	0	0	7	53
4	0	4	2	24	2	1	6	5	0	0	1	45
5	0	0	0	2	1	0	4	3	0	0	0	10

TABLE 40 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	6	6	6	20	8	5	10	1	1	5	6	74
M	8	8	7	8	13	3	9	6	7	8	6	83
M+	3	3	0	0	2	1	2	5	11	2	1	25
EDS	1	2	1	0	1	1	0	0	1	1	2	10

TABLE 41

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 10

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	18	30	65	113	16	27	57	61
MALE	13	15	43	71	18	21	61	39
TOTALS	31	35	108	184	17	19	64	100

TABLE 42

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR QUESTION 10

REMARK / SUBJECT	1	2	3	TOTALS	1%	2%	3%	TOTALS
SS	4	4	25	33	12	12	76	18
LA	9	10	18	37	24	27	49	20
SCI	6	9	14	29	20	31	49	16
MATH	3	8	19	30	10	27	63	16
OT	3	0	4	7	43	0	57	4
VOC	3	2	10	15	20	13	67	8
ART	2	3	4	9	22	33	45	5
PE	0	4	4	8	0	50	50	4
OTHER	1	5	10	16	6	31	63	9
TOTALS	31	35	108	184	17	19	64	100

TABLE 43

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 10

REMARK / EXP	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	4	5	7	16	25	31	44	9
5	4	14	14	32	12	44	44	17
10+	23	26	87	136	17	19	64	74
TOTALS	31	35	108	184	17	19	64	100

TABLE 44

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWN FOR CATEGORIES OF REMARK AND BLOCK FOR QUESTION 10

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	3	10	25	38	8	26	76	21
2	10	10	21	41	24	24	52	22
3	11	17	23	51	22	33	45	28
4	6	6	32	44	14	14	72	24
5	1	2	7	10	10	20	70	5
TOTALS	31	35	108	184	17	19	64	100

TABLE 45

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 10

REMARK / EDUC	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	8	18	44	70	11	26	63	38
2	17	21	39	77	22	27	51	42
3	5	6	17	28	18	21	61	15
4	1	0	8	9	11	0	89	5
TOTALS	31	35	108	184	17	19	64	100

TABLE 46

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWN FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 10

REMARK / SCHOOL	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	6	3	9	18	33	17	50	9
2	1	6	13	20	5	30	65	10
3	0	4	10	14	0	29	71	7
4	5	3	20	28	18	11	71	14
5	6	5	13	24	25	21	54	12
6	1	4	5	10	10	40	50	5
7	1	6	14	21	5	28	67	11
8	3	3	6	12	25	25	50	6
9	3	5	12	20	15	25	60	10
10	3	5	9	17	18	29	53	9
11	5	5	6	16	31	31	38	8
TOTALS	34	49	117	200	17	24	59	100

TABLE 47

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 11

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	14	11	11	10	6	4	6	4	4	6	11	87
F	8	13	5	13	20	12	14	8	12	13	11	129
SUBJECT AREA												
SS	7	4	5	3	4	2	3	2	2	4	4	40
LA	4	5	2	5	5	2	7	2	5	6	3	46
SCI	4	8	3	3	7	2	2	0	3	1	3	36
MA	3	2	4	4	4	2	3	4	1	4	2	33
OT	0	0	0	1	0	2	1	1	1	0	1	7
VOC	0	3	1	3	5	2	0	0	0	1	6	21
ART	3	1	0	1	0	2	0	0	1	1	1	10
PE	1	0	0	1	1	1	3	0	0	0	0	7
OTH	1	2	1	2	0	1	1	3	3	2	2	18
TEACHING EXPERIENCE												
1	1	3	2	1	2	5	1	3	1	2	2	24
5	5	3	0	3	6	5	4	3	3	3	5	40
10	17	18	14	19	18	6	14	6	12	14	15	157
YEARS ON BLOCK SCHEDULING												
1	1	1	15	0	0	0	1	1	14	2	4	39
2	20	2	0	1	3	1	1	2	2	16	8	56
3	2	16	0	1	14	12	5	3	0	0	8	61
4	0	4	1	20	2	3	7	4	0	0	2	43
5	0	0	0	1	1	0	3	2	0	0	0	7

TABLE 47 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	11	6	7	15	11	8	10	2	2	6	9	87
M	8	13	8	8	12	7	9	6	6	9	8	104
M+	3	3	0	0	2	0	1	4	8	2	2	25
EDS	1	2	1	0	1	1	0	0	0	1	2	9

TABLE 48

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 11

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	66	14	38	118	56	3	41	59
MALE	50	7	24	81	62	9	29	41
TOTALS	116	21	62	199	58	11	31	100

TABLE 49

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR QUESTION 11

REMARK / SUBJECT	1	2	3	TOTALS	1%	2%	3%	TOTALS
SS	26	2	9	37	70	5	25	19
LA	33	2	6	41	80	5	15	21
SCI	15	0	18	33	45	0	55	17
MATH	19	5	7	31	61	16	23	16
OT	3	0	4	7	43	0	57	4
VOC	6	4	8	18	33	22	45	9
ART	4	0	5	9	44	0	56	5
PE	0	6	1	7	0	86	14	4
OTHER	10	2	4	16	63	12	25	8
TOTALS	116	21	62	199	58	11	31	100

TABLE 50

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 11

REMARK / EXP	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	8	5	9	22	36	23	41	11
5	23	2	11	36	63	6	31	18
10+	85	14	42	141	60	10	30	71
TOTALS	116	21	62	199	58	11	31	100

TABLE 51

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND BLOCK FOR QUESTION 11

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	27	3	9	39	69	8	23	20
2	25	6	22	53	47	11	42	27
3	32	7	19	58	55	12	33	29
4	28	4	10	42	67	10	23	21
5	4	1	2	7	57	14	29	4
TOTALS	116	21	62	199	58	11	31	100

TABLE 52

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 11

REMARK / EDUC	1	2	3	TOTALS	1	2	3	TOTALS
1	46	11	25	82	56	13	31	41
2	52	9	26	87	60	10	30	44
3	13	1	9	23	57	4	39	12
4	5	0	2	7	71	0	29	4
TOTALS	116	21	62	199	58	11	31	100

TABLE 53

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 11

REMARK / SCHOOL	1	2	3	TOTALS	1	2	3	TOTALS
1	14	1	8	23	61	4	35	12
2	14	2	9	25	56	8	36	11
3	9	2	5	16	56	13	31	7
4	20	1	2	23	87	4	9	11
5	9	5	12	26	35	19	46	12
6	5	3	8	16	31	19	50	7
7	10	3	7	20	50	15	35	9
8	10	0	2	12	83	0	17	6
9	12	1	3	16	75	6	19	7
10	10	4	5	19	53	21	26	19
11	11	3	8	22	50	14	36	10
TOTALS	124	25	69	218	57	11	32	100

TABLE 54

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 12

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	14	8	11	11	4	5	6	2	4	7	9	81
F	7	13	6	14	20	10	13	7	16	9	11	126
SUBJECT AREA												
SS	7	4	4	3	3	2	2	1	3	4	4	37
LA	4	3	3	6	6	2	8	2	4	4	3	45
SCI	4	8	4	4	5	3	3	0	4	1	3	39
MA	2	1	3	3	3	1	3	3	4	3	2	27
OT	0	1	0	1	0	2	0	1	1	0	1	7
VOC	0	2	1	4	6	2	0	0	0	1	4	20
ART	3	2	0	0	1	2	0	0	1	1	1	11
PE	1	0	0	2	0	0	2	0	0	0	0	5
OTH	1	1	2	2	0	1	1	2	3	2	2	17
TEACHING EXPERIENCE												
1	1	3	1	0	1	5	1	2	2	2	1	19
5	5	3	0	5	5	3	3	2	5	4	4	39
10	16	16	16	20	18	7	14	5	13	10	15	150
YEARS ON BLOCK SCHEDULING												
1	2	2	15	0	0	0	1	1	18	0	4	43
2	17	1	0	0	2	0	1	1	2	15	7	46
3	3	13	0	2	14	11	4	3	0	0	7	57
4	0	4	2	22	2	4	7	2	0	0	2	45
5	0	0	0	1	1	0	3	2	0	0	0	7

TABLE 54 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	8	6	8	15	9	7	11	1	2	4	7	78
M	9	10	8	10	13	6	7	5	9	8	9	95
M+	4	2	0	0	1	1	1	3	9	2	2	25
EDS	1	2	1	0	1	1	0	0	1	1	1	9

TABLE 55

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 12

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	38	31	45	114	33	27	40	59
MALE	28	12	38	78	36	15	49	41
TOTALS	66	43	83	192	34	22	44	100

TABLE 56

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR QUESTION 12

REMARK / SUBJECT	1	2	3	TOTALS	1%	2%	3%	TOTALS
SS	21	3	13	37	57	8	35	19
LA	10	14	14	38	26	37	37	20
SCI	12	6	19	37	32	16	52	19
MATH	12	1	13	26	46	4	50	14
OT	2	0	5	7	29	0	71	4
VOC	3	5	9	17	18	29	53	9
ART	1	5	3	9	11	56	33	5
PE	0	5	1	6	0	83	17	3
OTHER	5	4	6	15	33	27	40	8
TOTALS	66	43	83	192	34	22	44	100

TABLE 57

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 12

REMARK / EXP	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	5	6	7	18	28	33	39	9
5	13	6	16	35	37	17	46	18
10+	48	31	60	139	35	22	43	72
TOTALS	66	43	83	192	34	22	44	100

TABLE 58

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK BLOCK FOR QUESTION 12

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	19	11	13	43	44	26	30	22
2	17	5	22	44	39	11	50	23
3	17	16	21	54	31	30	39	28
4	12	9	23	44	27	20	53	23
5	1	2	4	7	14	29	57	4
TOTALS	66	43	83	192	34	22	44	100

TABLE 59

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 12

EDUC \ REMARK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	26	21	26	73	36	29	35	38
2	30	13	44	87	34	15	51	45
3	9	7	9	25	36	28	36	13
4	1	2	4	7	14	29	57	4
TOTALS	66	43	83	192	34	22	44	100

TABLE 60

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 12

SCHOOL \ REMARK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	10	3	9	22	45	14	41	11
2	5	3	14	22	23	14	63	11
3	8	4	5	17	47	24	29	8
4	4	5	16	25	16	20	44	12
5	7	10	7	24	29	42	29	11
6	5	3	7	15	33	20	47	7
7	11	3	5	19	58	16	26	9
8	6	0	3	9	67	0	33	4
9	5	6	9	20	25	30	45	10
10	3	3	10	16	19	19	62	8
11	8	7	5	20	40	35	25	10
TOTALS	72	47	90	209	34	22	43	100

TABLE 61

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 13

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	12	6	11	12	5	5	10	1	3	8	8	81
F	7	10	5	16	18	8	13	7	15	7	11	117
SUBJECT AREA												
SS	6	3	4	4	2	2	5	1	3	4	3	37
LA	4	3	2	6	7	2	5	2	3	3	3	40
SCI	4	4	4	6	4	2	3	0	3	1	3	34
MA	2	1	4	3	3	2	3	3	4	2	2	29
OT	0	1	0	1	0	1	1	0	1	0	1	6
VOC	0	2	1	4	6	1	0	0	0	2	5	21
ART	2	1	0	0	0	1	1	0	1	1	0	7
PE	1	0	0	2	1	1	2	0	0	0	0	7
OTH	1	2	1	2	0	1	3	2	3	2	3	20
TEACHING EXPERIENCE												
1	2	2	2	1	1	4	0	1	2	2	2	19
5	6	2	0	6	5	3	6	1	4	3	4	40
10	12	13	14	21	17	6	16	6	12	10	13	140
YEARS ON BLOCK SCHEDULING												
1	1	1	15	0	0	0	1	0	16	0	5	39
2	16	2	0	1	2	0	0	2	2	13	7	45
3	3	9	0	2	15	9	5	1	0	1	6	51
4	0	3	1	23	1	4	11	3	0	0	1	47
5	0	0	0	2	1	0	1	2	0	0	0	6

TABLE 61 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	10	6	8	18	9	5	11	0	2	3	8	80
M	7	8	7	10	12	6	11	4	8	7	7	85
M+	2	2	0	0	1	1	1	4	8	3	2	24
EDS	1	1	1	0	1	1	0	0	0	1	1	7

TABLE 62

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 13

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	35	41	32	108	32	38	30	59
MALE	24	28	22	74	32	38	30	41
TOTALS	59	69	54	182	32	38	30	100

TABLE 63

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR QUESTION 13

REMARK / SUBJECT	1	2	3	TOTALS	1%	2%	3%	TOTALS
SS	14	14	10	34	41	30	30	19
LA	11	12	12	35	32	34	34	19
SCI	8	11	11	30	26	37	37	16
MATH	10	6	11	27	37	22	41	15
OT	2	3	1	6	33	50	13	3
VOC	4	10	5	19	21	53	26	10
ART	1	5	0	6	17	83	0	3
PE	0	7	0	7	0	100	0	4
OTHER	9	5	4	18	50	28	22	10
TOTALS	59	69	54	182	32	38	30	100

TABLE 64

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 13

REMARK / EXP	1	2	3	TOTALS	1	2	3	TOTALS
1	4	8	7	19	21	42	37	10
5	6	18	11	35	17	51	32	19
10+	49	43	46	128	38	34	28	70
TOTALS	59	69	54	182	32	38	30	100

TABLE 65

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND BLOCK FOR QUESTION 13

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	13	13	14	40	33	33	34	22
2	14	18	8	40	34	46	20	22
3	9	23	16	48	19	48	33	26
4	20	14	14	48	42	29	29	26
5	3	1	2	6	50	13	33	3
TOTALS	59	69	54	182	32	38	30	100

TABLE 66

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 13

REMARK / EDUC	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	22	30	22	74	30	41	30	41
2	28	27	24	79	35	34	31	43
3	8	9	6	23	35	39	26	13
4	1	3	2	6	17	50	33	3
TOTALS	59	69	54	182	32	38	30	100

TABLE 67

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 13

REMARK / SCHOOL	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	8	5	5	18	44	28	28	9
2	5	8	4	17	29	47	24	9
3	6	4	6	16	38	25	38	8
4	13	5	10	28	46	18	36	14
5	5	9	9	23	22	39	39	12
6	1	7	5	13	8	54	38	7
7	6	9	8	23	26	39	35	12
8	7	0	1	8	88	0	12	4
9	3	11	4	18	17	61	22	9
10	2	11	2	15	13	74	13	8
11	5	9	5	19	26	48	26	10
TOTALS	61	78	59	198	31	39	30	100

TABLE 68

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 14

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	12	6	11	12	4	3	5	3	3	7	6	72
F	5	11	4	47	20	11	12	6	10	9	5	140
SUBJECT AREA												
SS	7	3	4	4	3	1	3	3	3	4	3	38
LA	2	4	2	6	6	2	7	1	3	3	2	38
SCI	3	6	4	5	5	2	3	0	2	1	3	34
MA	2	1	3	4	3	3	2	2	2	3	0	25
OT	0	0	0	1	0	2	0	1	0	0	0	4
VOC	0	2	1	4	6	1	0	0	0	3	1	18
ART	3	1	0	1	0	0	0	0	1	1	0	7
PE	1	0	0	1	1	1	1	0	1	0	0	6
OTH	0	1	1	3	0	1	1	2	1	1	2	13
TEACHING EXPERIENCE												
1	1	1	1	1	1	5	1	2	2	2	1	18
5	3	2	0	5	6	5	4	1	2	4	2	34
10	14	14	14	23	17	4	10	6	9	10	8	129
YEARS ON BLOCK SCHEDULING												
1	0	1	14	0	0	0	1	1	11	0	3	31
2	15	2	0	1	1	2	1	1	2	14	4	43
3	3	11	0	2	13	8	4	2	0	1	4	48
4	0	3	1	24	3	4	5	2	0	0	0	42
5	0	0	0	2	0	0	3	3	0	0	0	8

TABLE 68 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	8	4	6	17	10	6	9	2	1	4	4	71
M	6	10	8	12	12	6	8	3	7	7	5	84
M+	3	4	0	0	1	1	0	4	4	3	1	21
EDS	1	0	1	0	1	1	0	0	1	0	0	5

TABLE 69

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 14

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	18	30	50	98	18	31	51	59
MALE	13	16	38	67	19	24	57	41
TOTALS	31	46	88	165	19	28	53	100

TABLE 70

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR QUESTION 14

REMARK / SUBJECT	1	2	3	TOTALS	1%	2%	3%	TOTALS
SS	10	12	14	36	28	33	35	22
LA	7	9	17	33	21	27	52	20
SCI	4	9	19	32	13	28	59	19
MATH	3	3	16	22	14	14	72	13
OT	1	1	2	4	25	25	50	2
VOC	2	3	10	15	13	20	67	9
ART	1	3	2	6	12	50	33	4
PE	0	4	2	6	0	67	33	4
OTHER	3	2	6	11	27	18	53	7
TOTALS	31	46	88	165	19	28	53	100

TABLE 71

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 14

REMARK / EXP	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	2	7	9	18	11	39	50	11
5	4	11	16	31	13	35	52	19
10+	25	28	63	116	22	24	54	70
TOTALS	31	46	88	165	19	28	53	100

TABLE 72

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND BLOCK FOR QUESTION 14

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	5	12	13	30	17	40	43	18
2	11	11	17	39	28	28	44	24
3	9	12	24	45	20	27	53	27
4	5	10	27	42	12	24	64	25
5	1	0	7	8	12	0	88	5
TOTALS	31	46	88	165	19	28	53	100

TABLE 73

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 14

REMARK / EDUC	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	12	12	42	66	18	18	64	40
2	15	26	35	76	20	34	46	46
3	3	6	10	19	16	32	52	12
4	1	2	1	4	25	50	25	2
TOTALS	31	46	88	165	19	28	53	100

TABLE 74

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 14

REMARK / SCHOOL	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	5	3	10	18	28	17	55	10
2	6	6	6	18	33	33	33	10
3	1	6	7	14	7	43	50	8
4	4	3	22	29	14	10	76	16
5	8	2	14	24	33	14	53	13
6	1	8	5	14	7	57	36	8
7	2	4	11	17	12	24	64	9
8	2	1	6	9	22	11	67	5
9	1	8	4	13	8	62	30	7
10	2	5	9	16	13	31	56	9
11	4	3	4	11	36	28	36	6
TOTALS	36	49	98	183	20	27	54	100

TABLE 75

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 15

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	10	4	9	9	4	3	4	3	3	4	9	62
F	7	10	4	15	15	13	18	7	14	9	6	118
SUBJECT AREA												
SS	4	3	5	3	3	2	3	1	1	4	4	33
LA	3	6	1	1	4	2	9	2	5	3	3	39
SCI	4	3	4	4	5	3	3	0	4	0	2	32
MA	2	1	1	4	2	2	2	3	3	3	0	23
OT	0	0	0	0	0	1	0	1	1	0	0	3
VOC	2	0	0	3	5	1	0	0	0	1	3	15
ART	1	1	0	0	0	2	1	0	1	0	1	7
PE	1	0	0	1	0	0	0	0	1	0	0	3
OTH	1	1	2	3	0	2	4	3	1	2	2	21
TEACHING EXPERIENCE												
1	1	2	2	1	0	4	2	2	1	2	2	19
5	4	3	0	5	5	4	5	3	3	3	3	38
10	13	9	11	18	14	8	14	5	13	8	10	123
YEARS ON BLOCK SCHEDULING												
1	1	2	13	0	0	0	1	1	0	16	4	38
2	15	2	0	1	1	1	2	2	1	12	4	41
3	2	8	0	2	9	12	2	2	0	0	6	43
4	0	1	0	20	2	3	10	3	0	0	1	40
5	0	0	0	1	1	0	3	2	0	0	0	7

TABLE 75 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	8	2	4	13	8	8	10	1	2	4	6	66
M	6	8	8	11	9	6	11	5	6	5	4	79
M+	3	3	0	0	1	1	1	4	8	2	2	25
EDS	1	2	1	0	1	1	0	0	1	1	2	10

TABLE 76

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR QUESTION 15

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	23	28	54	105	22	27	51	64
MALE	14	10	35	59	24	17	59	36
TOTALS	37	38	88	164	23	23	54	100

TABLE 77

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR QUESTION 15

REMARK / SUBJECT	1	2	3	TOTALS	1%	2%	3%	TOTALS
SS	8	7	17	32	25	22	53	20
LA	14	5	20	39	36	13	51	24
SCI	8	7	15	30	27	23	50	18
MATH	1	4	15	20	5	20	75	12
OT	1	1	1	3	33	33	33	2
VOC	1	4	8	13	8	31	61	8
ART	1	2	3	6	12	33	50	4
PE	0	2	1	3	0	67	33	2
OTHER	3	6	9	18	12	33	50	11
TOTALS	37	38	88	164	23	23	54	100

TABLE 78

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR QUESTION 15

REMARK / EXP	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	5	6	9	20	25	30	45	12
5	5	10	20	35	14	29	57	21
10+	27	22	60	109	25	20	55	66
TOTALS	37	38	88	164	23	23	54	100

TABLE 79

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND BLOCK FOR QUESTION 15

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	8	10	21	39	21	26	53	24
2	10	6	21	37	27	16	57	23
3	9	14	17	40	23	35	42	24
4	9	8	23	40	23	20	57	24
5	1	0	6	7	14	0	86	4
TOTALS	37	38	88	164	23	23	54	100

TABLE 80

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR QUESTION 15

REMARK / EDUC	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	14	16	33	63	22	25	53	38
2	18	14	37	69	26	20	54	42
3	2	6	16	24	8	25	77	15
4	3	2	3	8	38	25	38	5
TOTALS	37	38	88	164	23	23	54	100

TABLE 81

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL FOR QUESTION 15

REMARK / SCHOOL	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	5	2	11	18	28	11	61	10
2	4	6	6	16	25	38	38	8
3	2	3	7	13	15	23	62	7
4	7	4	13	24	29	17	54	13
5	5	5	9	19	26	26	48	10
6	1	10	5	16	6	63	31	9
7	6	0	16	22	27	0	73	12
8	2	0	8	10	20	0	80	5
9	4	6	7	17	24	35	41	9
10	2	4	7	13	15	23	62	7
11	3	4	8	15	20	27	53	8
TOTALS	41	44	97	182	23	24	53	100

TABLE 82

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 16

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	9	4	8	8	6	2	6	2	2	4	5	56
F	2	5	3	15	12	6	11	8	12	6	1	81
SUBJECT AREA												
SS	4	2	3	3	3	1	1	1	3	4	2	27
LA	1	0	0	5	3	1	6	4	3	2	1	26
SCI	2	4	2	5	3	1	3	0	1	0	0	21
MA	0	1	4	3	3	0	3	2	3	1	0	20
OT	0	1	0	1	0	2	0	0	1	0	0	5
VOC	0	1	1	3	6	1	0	0	0	2	1	15
ART	3	0	0	0	0	0	1	0	1	0	0	7
PE	1	0	0	1	0	1	2	0	1	0	0	6
OTH	1	0	1	2	0	1	1	3	1	1	1	12
TEACHING EXPERIENCE												
1	0	1	0	1	1	4	2	2	0	2	0	13
5	2	1	0	5	3	3	2	2	1	3	3	25
10	10	7	11	17	14	1	12	6	10	5	3	96
YEARS ON BLOCK SCHEDULING												
1	1	0	10	0	0	0	2	0	14	0	1	28
2	8	2	0	1	1	1	1	1	0	8	2	25
3	3	4	0	0	11	4	4	2	0	1	2	31
4	0	3	1	20	2	3	6	5	0	0	1	41
5	0	0	0	2	1	0	3	2	0	0	0	8

TABLE 82 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	6	4	3	15	7	4	6	1	1	4	3	54
M	3	4	8	8	9	4	10	4	5	2	3	60
M+	2	1	0	0	2	0	1	5	7	3	0	21
EDS	1	0	0	0	0	0	0	0	1	0	0	2

TABLE 83

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 17

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	11	10	12	16	9	6	8	4	4	6	9	95
F	10	17	6	22	17	15	17	9	19	14	12	146
SUBJECT AREA												
SS	6	4	5	5	4	2	3	4	2	4	4	43
LA	4	6	2	6	6	2	9	1	6	5	3	49
SCI	3	9	4	5	5	3	3	0	4	1	3	40
MA	3	2	4	7	4	4	4	4	3	4	2	41
OT	0	1	0	2	0	2	1	1	1	0	2	10
VOC	1	3	1	4	6	2	0	0	0	3	4	24
ART	3	1	0	1	0	2	1	0	1	1	1	11
PE	1	0	0	3	1	2	1	0	2	0	0	10
OTH	1	2	2	5	0	1	4	3	4	2	2	26
TEACHING EXPERIENCE												
1	2	2	2	0	2	6	3	3	1	2	2	25
5	4	2	0	7	5	5	4	3	6	4	3	43
10	16	22	16	31	19	10	17	7	16	14	16	184
YEARS ON BLOCK SCHEDULING												
1	2	1	17	0	0	2	2	1	22	0	4	51
2	17	2	0	1	2	4	2	2	1	17	7	47
3	3	18	0	2	14	15	4	3	0	1	8	68
4	0	4	1	32	4	0	10	3	0	0	2	56
5	0	0	0	3	1	0	3	4	0	0	0	11

TABLE 83 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	8	9	8	24	10	10	13	2	2	5	10	101
M	10	13	9	14	12	9	11	6	10	10	7	111
M+	3	4	0	0	2	1	1	5	10	3	2	31
EDS	1	2	1	0	2	1	0	0	1	1	2	11

TABLE 84

DEMOGRAPHIC TOTALS REPRESENTING QUESTION 18

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	11	6	10	14	6	4	8	4	5	8	8	84
F	9	15	7	22	19	13	12	9	15	12	12	145
SUBJECT AREA												
SS	6	3	5	5	4	2	1	3	2	3	4	37
LA	4	5	2	5	7	2	5	2	6	5	0	43
SCI	4	7	3	5	3	3	3	0	3	1	3	35
MA	1	1	4	6	3	3	3	4	3	4	2	34
OT	0	1	0	3	0	2	1	1	1	0	2	11
VOC	0	2	1	4	7	1	0	0	0	4	5	24
ART	4	1	0	1	0	1	1	0	1	1	1	11
PE	1	0	0	2	1	1	2	0	1	1	1	10
OTH	1	2	2	5	0	2	4	3	3	2	3	27
TEACHING EXPERIENCE												
1	2	1	2	2	1	4	2	3	19	1	3	40
5	4	3	0	4	4	4	2	3	1	4	3	32
10	15	17	15	30	20	9	16	7	0	15	14	158
YEARS ON BLOCK SCHEDULING												
1	2	1	16	0	0	0	2	1	0	1	5	28
2	16	2	0	1	0	1	1	3	0	17	7	48
3	3	14	0	2	14	12	3	3	0	1	6	58
4	0	3	1	30	3	4	6	4	0	0	2	53
5	0	0	0	2	1	0	3	1	0	0	0	7

TABLE 84 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	10	7	7	22	7	7	8	2	0	4	9	83
M	7	11	9	14	14	8	10	6	11	11	7	108
M+	3	2	0	0	2	1	2	5	8	3	2	28
EDS	1	2	1	0	2	1	0	0	1	1	2	11

TABLE 85

DEMOGRAPHIC TOTALS REPRESENTING "COMMENTS"

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
GENDER												
M	8	6	0	6	0	1	1	3	3	3	5	36
F	8	5	0	11	9	6	5	5	5	1	10	65
SUBJECT AREA												
SS	6	4	0	1	0	1	0	2	2	0	0	16
LA	1	3	0	4	3	0	2	1	0	1	3	18
SCI	4	0	0	3	3	1	1	0	1	1	1	15
MA	2	1	0	3	1	1	1	2	2	0	2	15
OT	0	1	0	1	0	2	0	1	1	0	0	7
VOC	2	0	0	1	2	0	0	0	0	0	5	10
ART	0	0	0	1	0	0	0	0	1	1	1	4
PE	1	0	0	2	0	1	0	0	0	0	0	4
OTH	0	2	0	1	0	1	2	2	1	1	3	13
TEACHING EXPERIENCE												
1	2	1	0	0	0	2	1	3	0	0	0	9
5	4	0	0	4	1	3	0	2	2	1	3	20
10	10	9	0	13	3	2	5	3	6	3	12	66
YEARS ON BLOCK SCHEDULING												
1	0	2	0	0	2	0	0	1	8	0	5	18
2	13	2	0	1	0	1	1	1	0	4	2	25
3	3	7	0	2	0	4	0	3	0	0	6	25
4	0	1	0	12	0	2	4	1	0	0	2	22
5	0	0	0	2	0	0	0	2	0	0	0	4

TABLE 85 CONTINUED

SCHOOL	1	2	3	4	5	6	7	8	9	10	11	TOTAL
EDUCATION												
B	6	2	0	10	2	3	5	2	2	0	6	38
M	8	5	0	7	5	2	1	4	4	3	5	44
M+	0	3	0	0	0	0	0	2	2	0	3	10
EDS	2	1	0	0	2	0	0	0	0	1	1	7

TABLE 86

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND GENDER FOR "COMMENTS"

REMARK / GENDER	1	2	3	TOTALS	1%	2%	3%	TOTALS
FEMALE	38	16	5	59	64	27	8	62
MALE	20	14	2	36	55	39	6	38
TOTALS	58	30	7	95	61	32	7	100

TABLE 87

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SUBJECT FOR "COMMENTS"

REMARK / SUBJECT	1	2	3	TOTALS	1	2	3	TOTALS
SS	12	4	0	16	75	25	0	17
LA	11	2	2	15	74	13	13	16
SCI	8	6	1	15	53	40	7	16
MATH	9	4	1	14	64	29	7	15
OT	3	2	1	6	50	33	17	6
VOC	4	5	1	10	40	50	10	10
ART	2	2	0	4	50	50	0	4
PE	2	2	0	4	50	50	0	4
OTHER	7	3	1	11	64	27	9	12
TOTALS	58	30	7	95	61	32	7	100

TABLE 88

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EXPERIENCE FOR "COMMENTS"

REMARK / EXP	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	5	3	1	9	56	33	11	9
5	12	8	1	21	57	38	5	22
10+	41	19	5	65	63	29	8	68
TOTALS	58	30	7	95	61	32	7	100

TABLE 89

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND BLOCK FOR "COMMENTS"

REMARK / BLOCK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	4	9	2	15	27	60	13	16
2	15	6	3	24	63	25	12	25
3	17	9	1	27	63	33	4	28
4	18	6	1	25	72	24	4	26
5	4	0	0	4	100	0	0	4
TOTALS	58	30	7	95	61	32	7	100

TABLE 90

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND EDUCATION FOR "COMMENTS"

EDUC \ REMARK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	18	12	4	34	53	35	12	36
2	31	10	3	44	70	23	7	46
3	6	5	0	11	55	45	0	12
4	3	3	0	6	50	50	0	6
TOTALS	58	30	7	95	61	32	7	100

TABLE 91

NUMERICAL FOLLOWED BY RESPECTIVE PERCENT BREAKDOWNS FOR CATEGORIES OF REMARK AND SCHOOL BY "COMMENTS"

SCHOOL \ REMARK	1	2	3	TOTALS	1%	2%	3%	TOTALS
1	11	3	2	16	69	19	12	16
2	4	5	2	11	36	45	19	11
3	0	0	0	0	0	0	0	0
4	16	0	1	17	94	0	6	17
5	7	2	0	9	78	22	0	9
6	3	4	0	7	43	57	0	7
7	5	1	0	6	83	17	0	6
8	6	1	1	8	75	13	13	8
9	2	6	0	8	25	75	0	8
10	2	2	0	4	50	50	0	4
11	5	7	2	14	36	50	14	14
TOTALS	61	31	8	100	61	31	8	100

APPENDIX C

PERMISSION

LETTERS FROM

PRINCIPALS

James Hughes
Principal
Vice-Principals
Phyllis Gibson
Jerry Gilliam
Eugene Ward

Volunteer High School

P. O. Box 247
Church Hill, Tennessee 37642

June 23, 1997

Dear Mr. Frederic Muse,

You have my permission to use the information concerning the block schedule gathered from my faculty for your doctorate. I wish you well in your future educational endeavors.

Sincerely,

James Hughes

Mr. James Hughes
Principal

WEST HENDERSON HIGH SCHOOL
3600 Haywood Road
Hendersonville, NC 28791
704-891-6571
Mary Louise Corn, Principal
Linda Graham, Assistant Principal
Frank Watkins, Assistant Principal

To: Frederic M. Muse
From: M.L. Corn M L Corn
Re: teacher survey
Date: 5/12/97

You have permission to give survey to teachers at West Henderson.

Crest Senior High School

800 Old Boiling Springs Rd.
Shelby, NC 28152

Roger McSwain
Principal

Tel: (704) 482-5354
Fax: (704) 482-1187

May 14, 1997

I give Mr. Muse permission to survey our faculty about block scheduling.

June Lail
Assistant Principal
Curriculum and Instruction

McDowell High School

Highway 70 West Route 6, Box 1 Marion, NC 28752
(704) 652-7920
Dr. Gary Laney, Principal

Mr. Muse has permission to survey the staff of McDowell High School.

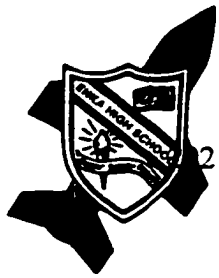
Gary K. Laney
Principal

Excellence in Education

Enka High School

P.O. BOX 579 ENKA LAKE ROAD
ENKA, NORTH CAROLINA 28728

704-667-5421



OFFICE OF THE PRINCIPAL

To whom it may concern

I grant permission to Mr. Muse to conduct a faculty survey.

Daniel H Holder
Principal

ACCREDITED BY THE SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS

MARION SENIOR HIGH SCHOOL

Office of the Principal

848 Stage Street
Marion, Virginia 24354
(540) 783-4731
FAX: (540) 783-4117

Home of the Scarlet Hurricane

Mr. Fredrick Muse had permission to distribute his survey on block scheduling at Marion Senior High School.

J. Michael Robb
Principal

OFFICE 298-2500
GUIDANCE 298-7665

ATHLETICS 298-4413
TRANSPORTATION 298-3642

A.C. REYNOLDS HIGH SCHOOL

1Rocket Drive
Asheville, NC 28803

May 9, 1997

TO WHOM IT MAY CONCERN:

It is with pleasure we give Mr. Muse the opportunity to do his survey among our faculty.

Sincerely,

R.L. Dalton

COMMITTED TO STUDENT SUCCESS

NORTH HENDERSON HIGH SCHOOL 295
KNIGHTS

Principal
Charles E. Thomas

Assistant Principals
Richard H. Barnwell
Denny D. Williams

I grant Mr. Mann permission to plan quarters in teacher mail boxes.

Henry D. Williams

35 Fruitland Road, Hendersonville, NC 28792 • (704) 697-4500 • Fax (704) 698-6129

Asheville High School

419 McDowell Street • Asheville, NC 28803

March 27, 1997

TO WHOM IT MAY CONCERN:

On March 12, 1997, I granted Mr. Frederic Muse permission to present a questionnaire regarding block scheduling to Asheville High School's teaching staff.

Sincerely,

Larry Liggett
Principal

ltm

TRAVELERS REST HIGH SCHOOL

115 Wilhelm Winter Street
Travelers Rest, South Carolina 29690
(803) 834-6464

To: Whom It may Concern:

I, Harvey Chaplin, Principal at Travelers Rest High gives permission to Mr. Muse to conduct a faculty Survey

H E Chaplin
Principal

Southside High - Center for International Studies
100 Blassingame Road • Greenville, SC • 29605-3300 • 864/299-8393
The School District of Greenville County

May 12, 1997

Mr. Frederic M. Muse
568 Caribou Road
Asheville, N. C. 28803

Dear Mr. Muse:

I approve of your request to use teachers' mailboxes to distribute questionnaires for your study.

Sincerely,

W. Lloyd Walker
Principal

VITA

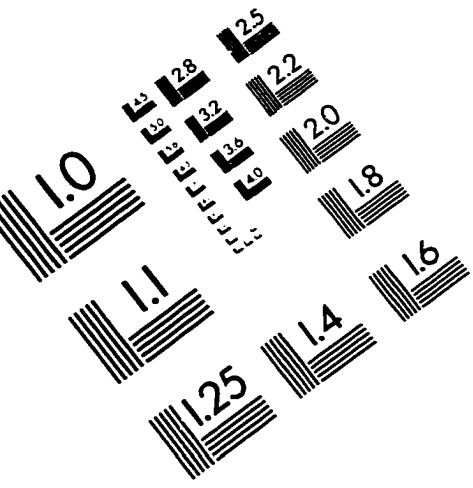
Frederic M. Muse

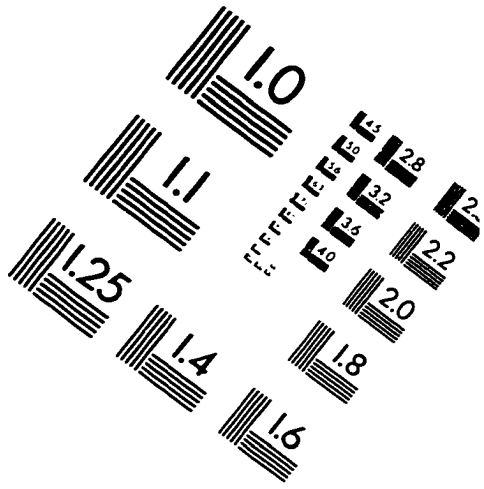
Education:
- BS in Education Western Carolina University 1969
- MA in Education Western Carolina University 1978
- Ed. S in Curriculum and Instruction Western Carolina University 1995

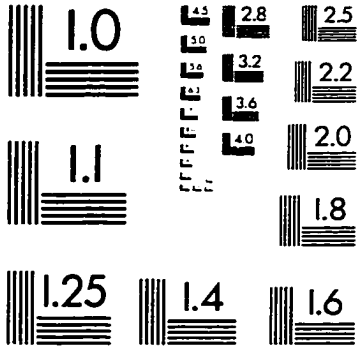
Professional Experience: Teacher in juvenile corrections 24 years

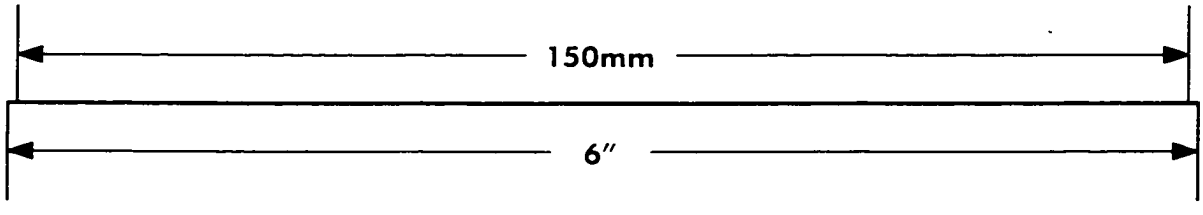
Honors & Awards:
- Teacher of the Year for the Juvenile Evaluation Center my school 1987
- Teacher of the Year for Correctional Education in North Carolina 1994
- Served on Executive Board of Professional Educators of North Carolina 1996-8
- Presented at the International Correctional Education Association Conference in Houston 1997

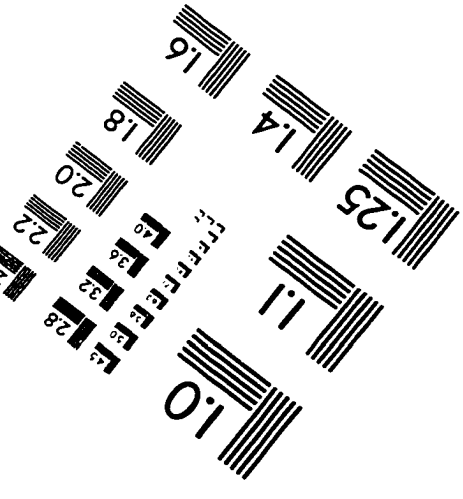
IMAGE EVALUATION TEST TARGET (QA-3)

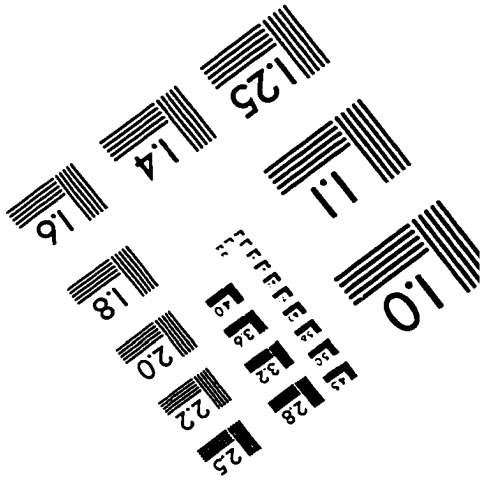












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